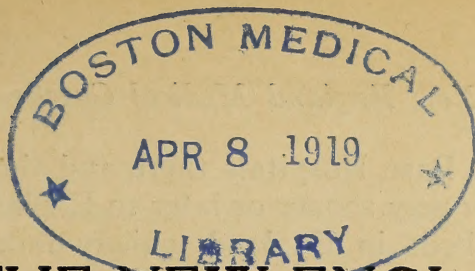




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ORIGINAL COMMUNICATIONS

MENTAL AND NERVOUS CONDITIONS DISQUALIFYING FOR MILITARY SERVICE

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In a recent letter from W. Maule Smith, M.D., Medical Superintendent of the West Bromwich Infirmary in England, he informs me that in Great Britain the British have four Base Hospitals for mental and nervous cases, *viz.*, two in England, one in Scotland and one in Ireland. The Canadians have one and the Australians have three such hospitals in Great Britain. All patients suffering from nervous and mental conditions are returned from France and are then drafted to these Base Hospitals, where they are reassorted and sent to smaller hospitals which are reserved for them. Cases which are still in the Army are sent to these Base Hospitals direct. If discharged from the Army while suffering from mental disease, they are sent to the county hospitals, but are paid for by the Government. "Most of these men that I have seen," he says, "are suffering from special sense derangement, taking the form of hallucinations of hearing and sight, also aphasia — or rather aphonia — lasting for a considerable time; amnesia and disorientation from the date of the casualty. The rule is that no case of mental disease resulting from fighting is certified in the ordinary way as insane."

From a still more recent letter from John Macpherson, M.D., Lieut. Col. and President of the Medical Board, I quote the following: — "Until recently all mental and nervous cases invalided from the expeditionary forces had been sent from France and other centers to this country (England). Recently, with regard to France, arrangements have been made for treating certain of the milder neurasthenics at Base Hospitals in that country. Cases occurring in Mesopotamia and Egypt can only be gradually transferred home

after passing through Base Hospitals there and through hospitals in Malta, finding their way sooner or later to England. There are approximately 2700 beds in England, chiefly in asylums which have been converted into military hospitals. During their stay the patients in these hospitals are not certified. We are under promise to the Country through the House of Commons to retain all overseas mental cases which are certifiable except (1) general paralytics, (2) those with previous asylum history, and (3) bad epileptics. This only applies to those who have been with the overseas force.

"With regard to neurasthenics proper," Dr. Macpherson continues, "it is difficult to estimate the exact numbers. They are, as a rule, housed in special military hospitals, under special medical care. These hospitals have been converted especially for these cases. As the number of casualties increases and the number of men serving the colors also increases, there is a gradual increase in the number of neurasthenics; and, in proportion to the severity of the fighting and the increase in the use of high explosives, the number of neurasthenics and shell-shock cases varies. They include the following classes: (1) shell-shock, (2) neurasthenics, (3) functional paralysis, (4) tachycardia, (5) epilepsies, traumatic and idiopathic, with a sprinkling of hysterics and various other nervous disorders.

"If you estimate that, of all beds for military purposes provided in this country, five per cent. are allocated to mental and nervous cases, you will, I think, have a fair estimate of what you will have to provide."

The report of conditions at Halifax for August, 1917, shows that for each unit of 500 returned soldiers, 30 are tuberculous, 25 nerve and mental, 70 amputations. On arriving at the Halifax discharge depot, hospital trains are in readiness for the unloading, and the mental cases, each with an attendant, are unloaded first and are sent to the insane hospitals at Coburg, Ottawa, Col. Alfred Thompson in charge.

Up to January, 1917, there have been approximately 300 000 troops sent overseas from Canada, of which 175 000 have seen service at the front. Of these, there have been reported among the Canadian troops in England 4316 casualties under the grouping of nervous and mental diseases, that is about 15 per thousand. It has cost Canada about \$2000 per man to send her troops to the continent and return. It is easy to see what a mistake it is not to eliminate these mentally defective and nervous soldiers as far as possible, before sending the men overseas; as 13 per thousand of the men never got to the firing line. The nervous and mental casualties of Canadian officers and men were 2.38 per cent., of a total of 180 496 casualties of all kinds, including deaths, wounds in action and general diseases requiring admission to the hospital. They were made up

irrespective of any question of discharge or permanent disability, such questions being determined at Quebec. Over 11 000 cases have been returned to Quebec, and they are now coming in at the rate 2000 per month. From 4000 general diagnoses of returned soldiers made by the Medical Board at the Quebec discharge depot, a group classification is as follows:

Gunshot wounds, all kinds	25 per cent.
Nervous and Mental Diseases	12 “
General Medical Diseases	12 “
Tuberculosis	7 “
Other cases	44 “

Thus, in more or less permanently disabled soldiers, nervous and mental diseases divide second place with general medical diseases, and outrank, as they do in our Army, tuberculosis.

The indetermination of the term “shell-shock” has contributed to the confusion so common in military statistics on that subject. There seems now to be a strong temptation to designate as “shell-shock” every medical case with nervous symptoms where the patient has been in the neighborhood of exploding shells. The tendency is to classify such disorders according to the apparent cause, without due consideration of the symptoms, course, or in many cases, the motive. A true concussion effect upon the nervous system, with organic changes, doubtless exists and sets up symptoms similar to those of Oppenheim’s grave traumatic neurosis. Surgeon-General Frothingham, who has been much in France, says that such cases are very rare. Most of the cases now denominated as “shell-shock” present no features with which neurologists were not fully familiar under the terms hysteria and neurasthenia, and they carry with them the tendency to exaggeration and shamming so common in those neuroses. Near the firing line, the diagnosis of “shell-shock” is made only when physical evidences of injury are also present, or when the soldier’s own statement as to what happened to him is fully corroborated.

It is evident from the case records of returned Canadian soldiers that this new term is also made to cover various mental diseases, notably dementia-præcox, which existed before enlistment, and would have developed in due course without reference to military service.

On August 1, 1917, the War Department issued, from the office of the Surgeon General, Circular No. 22, which is, in part, as follows: — “For the safety, efficiency and economy of the military service, it is highly essential that nervous and mental diseases be recognized at the earliest possible moment. Nervous and mental diseases may, and frequently do, exist in persons who are strong, active and apparently healthy, and who make no complaints of

disability. Such persons are, however, less than useless as soldiers, for they can not be relied on by their commanders, break down under strain, become an incumbrance to the Army and an expense to the government. Disorders of this character are often demonstrable only as the result of a special and painstaking examination directed toward the mind and nervous system. This circular is published for the special purpose of calling the attention of medical officers to the particular diseases most frequently overlooked on general examination, and the symptoms most important to their diagnosis; and to certain characteristics in personality and in behavior which might raise the question of mental disease."

Queerness, peculiarities and idiosyncrasies, while not inconsistent with sanity, may be the beginnings or surface workings of mental disease. A soldier is too important a unit for variations from a standard of absolute normality not to be looked into before the recruit who presents them is acceptable for service. To aid the neurologist and psychiatrist in these ways, the camp surgeon shall direct all medical officers, dental surgeons, instructors, hospital sergeants, barrack sergeants, and others who come in close contact with recruits to refer to him or the camp surgeon all recruits who persistently show any of the following characteristics: irritability, seclusiveness, sulkiness, depression, shyness, timidity, over-boisterousness, suspicion, sleeplessness, dullness, stupidity, personal uncleanliness, resentfulness to discipline, inability to be disciplined, sleep walking, nocturnal incontinence of urine, and any of the various characteristics which gain for him the name of "boob," "crank," "goat," "queer stick," and the like.

In detailing psychiatrists and neurologists to special duty with the Armies, the Surgeon-General has had in mind (1) the proper care of soldiers who become incapacitated through mental and nervous disease, (2) the special examination of recruits in the training camps, in order that those who, because of neuropathic or psychopathic conditions, are unfit for military duty may be identified and discharged from service.

Until the troops move abroad, the chief and most important responsibility of the military psychiatrists and neurologists will be the special examination of recruits. It is obvious that no man should be eliminated from the service who is fit to render a valuable service in this emergency. On the other hand, it is quite apparent that individuals suffering from certain forms of nervous and mental diseases should not be permitted to enter into service, as experience with the American armies has shown quite conclusively that such individuals are not capable of military service even in time of peace, and experience in the European armies has shown beyond question that such individuals are not able to withstand the rigors of modern warfare. At critical times they go to pieces, with the result that

the military force is weakened, is hampered in the free performance of its function, and the government is likely to be burdened after the war with the care of a large number of invalids.

It is important that the potential as well as the actual conditions of the recruits be kept in mind. It must be remembered that we have a perfectly definite situation to meet, — which is the elimination of men who, because of nervous or mental instability, are unfit for military service. Experience in the armies abroad shows quite conclusively that mental defect, *per se*, is often not sufficient cause for the rejection of a recruit. A previous history of insanity, epilepsy, chronic alcoholism, or spinal or cerebrospinal syphilis in any form, or a marked history of nervous instability, or difficulty of environmental adjustment over a long period, should be sufficient cause for rejection.

The duties of the psychiatrists and neurologists at the cantonments are twofold:

(1) Service at the Base Hospital, under the Commanding Officer of the Hospital, for the care of nervous and mental cases, and for the examination of all cases referred for special examination by Commanding Officers, Regimental Surgeons, or others.

(2) Service under the Division Surgeon, for the purpose of making general surveys of troops during group examinations or during small formations, and at other times, and selecting cases for special examinations which give evidence of mental or nervous instability.

Coördination and quickness of perception must be gone into in the examination of recruits when it is realized what the conditions are to which we are sending these men. For instance, when the enemy use many of the poisonous gases which have been creating such havoc among our troops, they, the troops, must be capable of quick and intelligent action. Thirty per cent. of all bombs now used by the Germans and Allies are gas bombs. These include the paralyzing gases, that is, prussic acid, which is poisonous in one part to 10 000, and the lachrymating gases, ethyl-chlorid, for example, which puts the soldier out of business when diluted 1 to 1 000 000. Then there are the cloud gases, such as chlorin or gas known as phostagen, which is a combination of chlorin and carbon monoxid. Two or three breaths of this gas bring on a chronic pneumonia which usually results in death in three to four days. The enemy bring this gas to the front in liquid form, confined in drums through which pipes are led toward the foe. When the wind is in the right direction the air is let into these drums, which vaporizes the contents, and the gas, being heavier than air, rolls over the surface of the earth and into the trenches and dugouts, in the form of a cloud, visible by day, but invisible at night. Gas masks with the neutralizing chemicals attached thereto render all the 12 or

13 gases used by the enemy harmless, but these masks have to be put on within six seconds from the moment the signal is sounded, else the damage is done and the soldier's death is only a matter of time, or if he has not breathed enough gas eventually to cause his death, he is rendered useless for further service. In other words, a man once gassed is considered fit only for civil life and is often not much good for that.

Quick action is again necessary in the handling of the hand-grenade. Holding one of these bombs in the right hand, the soldier has to remove a plug or cap, which automatically lights the fuse. If this bomb does not leave his hand and get away toward the enemy in four and one half seconds, he and his companions, or those near him, are blown to pieces. Once again, when the Allies are preparing for a charge or going over the top, a barrage of fire from the heavy artillery precedes their advance. The soldier has to be intelligent enough to time that barrage and the barrages following it, so as to keep between them and not get into them. Because of these conditions of modern warfare every man sent abroad should be normal, capable of first-line work—the very pick of our country, in other words.

Our examinations of recruits at Camp Devens, which include the referred cases from over 30 000 men, have brought out the fact that the general practitioner has not been able to pick out many men whose mental condition disqualified them for service or who were mentally defective.

The Neuro-Psychiatric Unit at Ayer is composed of the following staff: — Major L. Vernon Briggs, Capt. Morgan B. Hodgkins, and Capt. Douglas A. Them. Two wards are nearly completed for this unit, and apparatus for hydrotherapy and electrotherapy installed; and a full corps of nurses and attendants and specialists in hydrotherapy and electrotherapy will soon be actively engaged in the care of neurological and psychiatric cases referred from the Base Hospital of 1000 beds and from the Infirmaries of the several regiments. In the meantime we are examining the recruits referred to us. It has been interesting to observe several well-defined cases of general paralysis coming out in the third decade.

When we started our neuro-psychiatric examinations we thought that neurology had but a small part to play in our service, but at the present time it occupies not less than 30 per cent. of all our cases. We find many cases of residual infantile paralysis, neuro-syphilis and epilepsy who have been holding responsible positions; and a large group of epileptics whose convulsions have not been of sufficient severity or frequency to keep them away from work, but which would render them unfit as soldiers.

We have also found many imbeciles who should be committed. Among the chronic alcoholics it has been interesting to note the

frequency of convulsions. Many cases who have had convulsions have not had delirium tremens, and some who have had delirium tremens have not had convulsions. We have been rather surprised not to find more malingerers, there being but comparatively few among cases referred to our clinic.

The method of examination of troops, be they referred or not, is neuro-psychiatric and covers seventeen questions, which take about six to ten minutes to go over. If these questions bring out abnormal conditions, a further examination is gone into. The seventeen questions are as follows:

1. Name.
2. Age.
3. Civil state.
4. Birthplace. (If of alien birth, length of time in States.)
5. Character and extent of education.
6. Nature of former occupations, and length of service in each. (b) Reasons for abandoning any given occupation.
7. Reasons for entering service.
8. Date in mustering in.
9. Attitude toward duties.
10. Attitude toward fellows.
11. Penalization for misdemeanors.
12. Consumption of alcohol.
13. Venereal infection.
14. Sleep (Dreams).
15. Appetite.
16. Digestion.
17. Emotional tone.

This is always followed by a brief neurologic examination whereby the tendon reflexes are tested in the usual manner, pupils examined for the accommodation to light and distance, the tongue, facial muscles and fingers tested for tremors. Station, gait, co-ordination, are all tested in the usual way. If any of these tests indicate that a further examination is necessary, it is of course followed up to determine the diagnosis.

Soldiers who have had this examination at Camp Devens to date have been specially referred to the Neuro-Psychiatric Clinic by Regimental Surgeons, Regimental Officers, Headquarters Division, and include disciplinary cases, and cases from different services at the Base Hospital. To date these number over 500 cases, of which 372, or 75 per cent., have been rejected as unfit for military service.

The rejected cases fall within one of the following groups:— feeble-minded, epileptic, constitutional and psychopathic states. Two or more of these groups may be associated in the same case,

that is, the epileptic may be primarily feeble-minded, and may eventually develop psychotic symptoms.

The groups may be further divided as shown by the charts, which represent the work of this unit up to November 1st. This represents over 1 per cent. of the entire 76th Division, and includes officers as well as enlisted men. It is fair to say that over 70 per cent. of the rejected cases might have been missed in a general physical examination, as given by the Exemption Board, but it is needless to say that such diseases as chorea, neurosyphilis, hemiplegia and paraplegias and palsies should have been easily recognized and exempted.

About 50 per cent. of all the cases rejected, in the opinion of the members of the Neuro-Psychiatric Clinic, would be benefited by institutional treatment and care. It is obvious that these cases should be followed up, and endeavor made to institute proper treatment and care.

In closing I would like briefly to mention three cases which appear to us of unusual interest:

Case 1.—P. M. J., aged 27 years, born in Plymouth, Mass. Student at Amherst Agricultural College. At the age of 11 was a student of nature and spent much time in the woods observing the habits of animals. Acknowledged that he had gonorrhœa, but denies syphilis. Referred to our clinic by the Company Commander, on account of statements made in the presence of officers, especially in regard to an invention which would revolutionize the running of automobiles. At our examination he stated that he could furnish the U. S. Army with meat at four cents a pound, that he had a million dollars which he could put his hand on tomorrow which he could use as capital. He later confided to one of us that the million and as much more money as he wanted was in South America waiting for him—that some woman was going to give it to him because of his invention regarding ice, which idea she had put into execution and made millions of dollars. He stated that he had interviewed hundreds of soldiers at Camp Devens and ten officers, also the same number of soldiers and officers in England; that he added together their opinions as to war, struck an average, got the percentages, and had thereafter dismissed the whole question from his mind. He made other extraordinary statements and was somewhat threatening in his attitude when expressing his impatience at the officers for not giving him a hearing, and said that the hospital authorities were keeping him in the wards when he had so much important business to attend to. The Wassermann showed four plus reaction. His case was diagnosed as general paralysis, and sent to the Psychopathic Hospital in Boston.

Case 2.—N. B., 22 years of age, appeared complaining of severe tonic spasms in both the upper and lower extremities. These spasms were more severe when muscles were at rest, and passed off after passive movements had been exercised on the arms and extremities, so that after patient had used either arms or legs for any time he had little difficulty and no pain until they were put to rest. Neurological examination presented nothing worthy of note excepting a marked exaggeration of the deep tendon reflexes. Family history negative, with the exception that the patient claimed that mother and brother suffered from the same trouble. Diagnosis, congenital myotonia (Thomsen's disease). Although this case hardly falls within the realms of either mental or nervous diseases, it appeared to be of sufficient interest to justify reporting, inasmuch as the literature up to the present time reports only about 30 similar cases.

Case 3.—W. F. M., 301st Infantry, born Feb. 9th, 1899, went as far as the 8th grade in school, but at 14 was dropped on account of truancy. Has a brother in Bridgewater State Hospital for the Criminal Insane; has been arrested once for drunkenness in Dedham, twice in Boston, three times in Roxbury. Was seven

years employed in Plant's Shoe Factory, and was drafted to Ayer from his residence in Roxbury, Oct. 10th. On the following Sunday at 2.30 P.M., he walked out of Camp and all the way to Boston *via* Lowell and Arlington. He said that the men at Camp were framing him up and injecting electricity into him, especially into his legs. After one week at home, he told the brother of the U. S. District Attorney about the electricity, and how they tried to "get him" at Ayer with electricity. He was advised to see the U. S. District Attorney, who had him arrested, and he was sent to Fort Banks as a prisoner for desertion. I was ordered to Fort Banks to examine him, and found him somewhat demented, with hallucinations of hearing. He said that his thoughts came back to him by voices which he heard. He now believes that people are calling him names, especially "superstitious fairy." The voices also swear at him, and tell him the Federal authorities are trying to frame him up. He acknowledged being at one time in a Psychopathic Hospital, and inquiry at the Psychopathic Department of the Boston State Hospital reveals the fact that he has twice been an inmate of that hospital, and that his last discharge was under date of Sept. 20th, 1917. Diagnosis, dementia præcox, paranoid form; rejection recommended.

Case 4. — F. C. D., single, aged 24, born and resides East Hartford, Conn. Went to 8th grade in school — says he went "crazy" over one George Cohan, an actor — although he hunted for him he never found him. Claims he was doped and laid up at New Haven, and that when he tried to get away they knocked his head on a cement floor. Gives history of residence at the Connecticut Hospital for the Insane, Middletown, Conn. Patient demented and somewhat excited. Was discharged by our recommendation, after diagnosis as dementia præcox. After being paid off and his ticket bought he was left at the station, although we had recommended that he be attended to his home in Connecticut. He did not take the train, but returned to the hospital, and demanded that he be sent to the trenches to fight. On account of creating some disturbance, he was arrested and placed in charge of the Provost Marshal in the civilian jail in the camp. Here, at supper time, he drew a knife across his throat, and on this account and on account of a newspaper reporter getting hold of certain facts regarding the case from the jail authorities, to save further publicity and to better care for the man, he was returned to the Base Hospital, and later sent to the Psychopathic Hospital in Boston in an ambulance.

In reply to an inquiry directed to the Connecticut Hospital for the Insane, Dr. Floyd Haviland, the superintendent, wrote as follows: — "F. C. D. was in our Hospital from Oct. 22d, 1912, to April 15th, 1913, being on the latter date discharged into the custody of his father as improved. At the time of his admission he was 19 years old. The onset of the psychosis was said to have been five weeks previous to the date of admission. He was first taken to the Hartford Retreat, where he remained until Oct. 18th, 1912. According to the committing physicians, he imagined that he was a great athlete and made application to Yale College for appointment as Assistant Doctor of Athletics. He took off his clothes in New Haven and tried to do various athletic feats on the street; was violent and smashed furniture in his room. The day after admission he was found lying in a nude condition on the floor, with all muscles tense, his extremities extended in a peculiar manner. When spoken to, he sprang up and moved about. He seemed to be dazed, and questions had to be repeated in a loud tone before he would reply. He stated that he had been doped by "George Cohan" and others. Sometimes he would stop in the middle of a speech, and look fixedly at some spot as if he heard some one. A few days later he was up and dressed, and spent much of his time standing in one place, drumming on the door and repeating senseless words or syllables. At night he usually covered his head with the bed-clothing. Physically, there was a positive Wassermann of the blood serum, there was slight inequality of pupils, knee-jerks were absent, and there was considerable tremor of eyelids and protruded tongue. According to the records he was diagnosed dementia præcox, catatonic form, with a possibility of dementia paralytica to be considered. According to the records he became more composed and for some time before his discharge, he assisted in the work on the farm."

Case 5. — W. H. P., arrested while intoxicated for insulting an officer; three empty Jamaica ginger and one vanilla extract bottles found on him. He stated that he was released from Salem Jail on condition that he report to the exemption board and accept service in the National Army. He says that he

was arrested on July 18th, 1917, and sentenced to three months in the Salem Jail; sentence suspended. Arrested again for similar offense about Aug. 12th; received a three months' suspended sentence in the House of Correction, Salem. Was serving this sentence when his father received a pink card requesting him to report to the exemption board, Salem, Sept. 18th. He said he was pardoned by the County Commissioners on the morning of Sept. 18th, and sent to the office of the local board in Masonic Temple, where he said he was told by the chairman to report again on the 23d, or else he would be sent to jail; this he did. He has been intoxicated twice since coming into camp. He began drinking at 16 years of age; the last six months has drunk about a quart of whiskey a day. Thinks he has been arrested at least fifty times for drunkenness and once for larceny of crackers from Boston and Maine freight car; has served two jail sentences for drunkenness in Salem, has been sentenced three times at Bridgewater State Farm and three times to Concord Reformatory. Was released from Concord in 1914 for one year on condition that he go to the Norfolk State Hospital, which he did on Sept. 21st, 1915, and was released Nov. 7th, 1915.

Case 6. — F. S. Referred by Company Commander. Patient came under armed guard, having attempted to run away several times. Has on him the following paper, which he claims to have presented to the exemption board: —

"Bangor State Hospital, Bangor, Maine,
August 19th, 1917.

"This is to certify that F. S. (correct name —) has been a patient in this hospital from Feb. 17th, 1914, to May 18th, 1917. On admission he was 23 years of age, born in Russia, length of residence in United States unknown. During his residence in the hospital he was depressed, agitated, suspicious and suffering from hallucinations and delusions. During the last three months he improved and was allowed to leave the hospital on a six months' parole. Clinical diagnosis, dementia-præcox, catatonic type.

L. F. NORRIS, *Acting-Superintendent.*"

— This case was rejected.

We have also referred to our clinic the so-called "conscientious objectors." These may be divided into four groups: — (1) The objector who is really *conscientious*, who objects to taking life or entering into combative service, but who is willing to take up any other branch of the service, including that of stretcher-bearer from the first-line trenches; (2) The *religious objectors*, including those calling themselves "Pentacostals," members of the Society of Friends (Quakers), Seventh Day Adventists, and members of the International Bible Students' Association. Some of these religious objectors are willing to enter into the service as noncombatants, others refuse to become any part of the military system; (3) The *Christadelphians*, who have now been exempted in England, providing they agree to engage in work of "national importance" such as farming, factory work, etc. These men refuse to don military clothes or to salute an officer or do any military service, even service in military hospitals, and declare they would none of them raise his hand to help a soldier if he was dying and an act of his would save him, because the soldier is part of the military system; (4) The *objector who is deluded*, whose abnormal mind has been swayed by stronger normal minds, and who is mentally diseased or defective, and must be promptly rejected.

The following is the classification of those rejected to Nov. 1st, 1917, but does not include some thirty whose papers have not

been signed pending the obtaining of histories or further observation in the Base Hospital.

1. Defective mental development,	164
2. Epilepsy,	92
3. Chronic alcoholism,	27
4. Dementia præcox,	12
5. Constitutional psychopathic states,	17
6. Neurasthenia,	9
7. Chorea,	5
8. Manic-depressive insanity,	7
9. Hysteria,	4
10. Cerebrospinal syphilis,	3
11. Tabes,	2
12. General paralysis,	2
13. Drugs (Morphin 6), (Heroin 1),	7
14. Toxic psychosis,	1
15. Traumatic psychosis,	1
16. Hemiplegia,	2
17. Paraplegia,	1
18. Contracture,	1
19. Migrain,	2
20. Congenital myotonia (Thomsen's disease),	1
21. Enuresis (exaggerated),	2
22. Psychasthenia,	10
Total,	<hr/> 372

These rejections were made from a total of 1324 officers and 27 482 men, the military strength of the cantonment to Nov. 1st. The total rejections to date for all causes have been one in every 8 of the draft sent to Ayer.

The figures I have given only show a cross section, as it were, of our work resulting in the elimination of the mentally and nervously unfit, for our work is far from finished. At the present time we are having referred to us about 15 cases a day, and our percentage of rejections is greater as time goes on, because of the more intimate knowledge of the hospital staff and regimental surgeons of the kind of cases which should be referred.

*Base Hospital, Camp Devens,
Ayer, Mass., Nov. 5, 1917.*

PLEA FOR MEDICAL RESERVE RECRUITS*

FRANK C. RICHARDSON, M.D.

Every careful observer of public events and popular sentiment must be impressed with the fact that neither the vastness of our task nor the measure of the effort necessary to perform it has yet dawned upon the American people.

Many high-sounding statements proceed from Washington these days in regard to the remarkable achievements of the Administration in preparing for war. It is not well, however, that we should build too high hopes upon them. It may sound impressive to say that where we had only 200 000 organized soldiers last April, we have 1 000 000 in camp or in the field today; that we are to build so many millions of tons of shipping; and that we are to spend so many billions of dollars for ordnance. But I think we should have a care not to be entirely misled or "set up" by such statements. If the figures on what we had six months ago are compared with what we have today in two parallel columns, the impression of effort thereby conveyed is considerable. Yet such a comparison is misleading and may be mischievous in that it is liable to lull us into a false sense of security. The true comparison is not between our former negligible military establishment and our present considerable one, but rather between what we have today and what we shall need to have in order to win the war. It seems to me that we have not the right to congratulate ourselves very much upon the fact of having raised and equipped a million soldiers if we really need four millions; it is not befitting that we doctors should stop to boast of having enrolled between thirteen thousand and fourteen thousand men in the Medical Reserve Corps when we shall need ten times that number. We must have much better vision than is in evidence today and a much stronger determination not to attain to any particular figure in men, money, material or ships, but to do whatever may be necessary to bring the war to a reasonably early end.

A prominent army officer told me recently that in his opinion the Germans have never felt more confident of victory than they do today, and it is the general opinion in army circles that it is only by a constantly increasing accumulation of men, material and transportation on so colossal a scale that it cannot be withstood, that we can use the lives of our young men economically and win that for which we are struggling.

Now, are we doing our part? That is the point to consider. It is needless to remind you how essential to this tremendous service is the medical arm. When we remember that to every thousand of

*Remarks at the meeting of the M. H. M. S., Nov. 7, 1917, Evans Memorial.

troops ten medical officers are considered necessary something of the magnitude of our task may be realized. Are we alive to the vital importance of fulfilling our obligation to our country?

Nothing need be said of the personal sacrifice involved in the performance of this duty, the sacrifice to be made by family and patients. Neither is it necessary to speak at length of the emoluments, the attractions of military life — the companionship with fine red-blooded men who are doing things is in itself a stimulus. It shakes off the dust of a medical practice, awakes all that is best in a man, and furthermore, it gives a man that feeling that all like to have but not all like to struggle and work for, that you are doing something worthy, a feeling that you will carry with you to your grave.

I wish only to remind you of the present need, to appeal to your patriotism and sense of duty, and to make the earnest plea that we wait not to be forced into this service, but that every able-bodied, earnest man get into the service, gets in with all his heart, takes the three months' intensive training, and proves that the medical profession is still in the vanguard of everything that is fine and loyal. This thing that you will do will be the greatest thing you have ever done; the feeling of righteousness it will bring to you will be the finest you have ever known.

A LONG-DISTANCE VIEW OF PROSTATECTOMY

HORACE PACKARD, M.D., F.A.C.S., Professor of Surgery, Boston University
School of Medicine

This communication is presented in answer to a query recently propounded as to the remote and final results of removal of the prostate. This view of the subject seems timely because most of the literature which has appeared since this has become an established surgical procedure has dealt with the indications for operation, the technic and the immediate results. This is a somewhat difficult phase to treat *in extenso* because the subjects of this operation are all far past the middle period of life when other causes quite apart from the operation itself or the local results therefrom may bring life to an end. In examining my records of prostate cases of the past fourteen years I find that a very large percentage were over seventy years of age and many of them were in a very wretched condition because the operation was invoked far past the time of election for the best results. A case which has drifted on and permanently into catheter life with consequent cystitis and concentric hypertrophy of the bladder wall or dilatation and atony and long existing back pressure with diverticula, cannot anticipate a cure of these conditions even though the prostate be successfully

removed. He may recover from the immediate effects of the operation and be regarded as a success from a surgical point of view but the damage from procrastination will never be effaced. Obviously cases of this kind do not present a fair reflection of what the remote results of prostatectomy are in cases which seek operation early, before irreparable damage has occurred.

The following case history would probably be accepted as a surgical success by all, both professional and lay. At least the patient considers himself a shining example of modern surgical science. At the present writing he is 80 years old and it is 10 years and 8 months since the operation:

C. J., a professional man, age 70, had been unable to empty the bladder voluntarily for two years. He had become thoroughly established in the catheter habit for 18 months. In addition to the daily use of the catheter, repeated instrumentation of the bladder had been practised by an electrical specialist. All this resulted in infection of the bladder to the end that the urine was at all times heavily loaded with pus. A suprapubic cystotomy was made for temporary drainage and flushing of the bladder, with marked improvement both in his general condition and locally. Suprapubic prostatectomy was then effected with final healing and restoration of voluntary urination. He was cured as far as restoration of voluntary evacuation of the bladder was concerned, but mark the sequel—he has never fully recovered from the cystitis; notwithstanding repeated and faithful irrigations of the bladder and the use of autogenous vaccins, the urine constantly shows the presence of bacteria and he has periodic exacerbations characterized by bladder irritation and systemic toxæmia.

In contrast to the above is the following case (a physician) reported in the patient's own words. He had never used the catheter, had no cystitis, his residual urine was but two ounces, the integrity of his bladder wall was practically unchanged, he had no back pressure symptoms. He is now 81 years of age (10 years since the operation). He writes:

"So far as my control of the sphincter vesicæ goes this is practically perfect now, though for some time after the operation it remained fitful and imperfect—sudden escapes occurring unexpectedly during the day. At night, which was the trying time, it soon became automatic, sleep not being disturbed and the voiding of urine was complete. Now at very rare instances under sudden mental stress, there is a very slight escape quickly controlled by effort of will.

"The frequent wakening at night, the urging to frequent urination during the day, the delay in starting the urinary flow have entirely disappeared. Often in travelling or at inconvenient times I am able with comfort to retain the urine eight or even ten hours when a little careful of the amount of liquid consumed beforehand or during the need of restraining the action of the kidneys. These and the old undue sensitiveness of the bladder are things of the past.

"The result is a marked improvement not only in my sleep but in my general health and enjoyment of life. With the approach of my eightieth year I have found it expedient to abandon practice, but still find myself interested in professional questions although shrinking from the drudgery and physical effort."

These two cases are quoted at the outset of this paper and the reader is asked to analyze them critically since they represent the two great classes of cases which the surgeon is called upon to treat. The class represented by the first case are poor surgical risks for the reason of irreparable damage which has come about from pro-

crastination. Such cases are, to be sure, likely to go through the operation safely, but the pitfalls of sepsis, anorexia and mal-assimilation, heart failure and hypostatic pneumonia are likely to make the weeks following the operation full of anxiety and life a short shift. It is true that by the adoption of modern methods of preparatory treatment, constitutional and local, such cases may pull through and be greatly relieved and live for years as in the case cited, but in the sum total of that class of cases there are sure to be chronic bladder infections which linger on through the patient's life; a contracted bladder still imperiously calling the patient up many times a night; or a fistulous opening may persist at the site of the wound, keeping the patient moist and uncomfortable. These, even though the patient recover from the immediate results of the operation, are a drag and a drain upon him and tend to shorten the span of life which an earlier operation might have afforded.

Obviously, such unfavorable post-operative sequelæ should not be scored up against the surgeon, nor against the operation, but against the procrastination — the fear, or the repugnance of the patient to any operation at all.

Indeed it is with many misgivings that the conscientious surgeon operates on these derelicts for he well knows that an appreciable mortality awaits upon his best efforts, and this with the disappointing annoying sequelæ above referred to bring to an otherwise great and beneficent surgical procedure unmerited condemnation.

Of the class of cases represented by the second case-history little need be said. The clear-cut and positive testimony given in the patient's own words supplemented by the groups of cases which are to follow answers in the most eloquent way the query which suggested the preparation of this paper.

The successive groups of cases whose personal testimony is herewith appended are mostly cases which came to the writer *au naturel*, i.e., they had not been materially injured by procrastination, instrumentation of the bladder, or back pressure. They came early while in good physical condition because their alert family physician wisely advised and urged them to do so. A very serious responsibility rests upon the family doctor in these cases, for he who aids or abets in the establishment of the catheter habit or complacently views the insidious symptoms of prostatic obstruction without fully warning his unfortunate patient of the impending catastrophe and urging to the only sane course, *viz.*, early prostatectomy, is failing in his full duty as a wise and faithful physician.

A GROUP OF CASES WHICH LIVED SIX YEARS OR MORE AFTER
THE OPERATION OR WERE STILL ALIVE AT THE EXPIRATION
OF THE SIX-YEAR PERIOD :

A Ten Year case reported by his son. Was operated on (suprapubic prostatectomy) in his 54th year and lived ten years and three months.

"Dear Dr. Packard:—

"In reply to yours of Sept. 4th will say that father died on the 26th of July last (interstitial nephritis). From the time he left Boston after the operation until his death he had perfect control of urination. On entering the hospital he weighed 150 lbs., having suffered a great deal for three years. One year later he weighed 180 lbs. and continued the same, not varying more than two or three pounds until Sept., 1915, when he began to show symptoms of nephritis. But during his sickness he often remarked that he had enjoyed ten years of comfortable life, in fact never would have known that he had been a victim of prostatic trouble. Father never suffered one inconvenience from the operation. He was apparently normal in bladder control. Would go to bed and sleep all night and not the least inconvenienced during the day.

"I am very glad, Doctor, to comply with your request and if there is any further information would be very glad to give it.

"Very sincerely,"

Eleven Year Case, 73 years old, operated in 1906, reported by his physician.

"Dear Dr. Packard:—

"Replying to yours of the 4th *inst.*, just received, I have called up and Mr. — states first, 'I am very much alive'; in fact, he is actively engaged in a carpentering jobbing business, conducting it and sometimes taking an active hand himself; second, 'I regained perfect control of urination and retained it up to the present time'; third, 'I was not only restored to a comfortable condition but I was greatly improved in general health.'

"Sincerely and cordially yours,"

Ten Year Case, now 82 years old, reported by his physician.

"Dear Dr. Packard:—

"In reply to your questions which reached me recently I am delighted to say that Mr. J. R. made a magnificent recovery and has been in excellent health ever since his operation. It was a decided success from every standpoint. He is still living and has very good health for one of his years. On account of high blood pressure his nervous system has suffered and during the past year he has felt and seemed old.

"Very truly,"

Twelve Year Case, 76 years old, reported by his physician.

"My dear Dr. Packard:—

"In regard to Mr. —, whom you operated on twelve years ago, he is in very good health, has no dribbling of urine, can void very nicely although rather more frequently than in his younger days; he is now 76 years old.

"Yours very truly,"

Ten Year Case. This was complicated with a very bad cystitis caused by repeated instrumentation of the bladder over a long period prior to operation. A preliminary suprapubic drainage was made. Reported by the patient.

"My dear Doctor:—

"I am glad to report that the operation performed ten years ago this spring was entirely successful. I have had no trouble in passing or controlling the pas-

sage of urine. I pass water every three or four hours during the day, and from three to four times at night, according to the soundness of my sleep, but have no trouble in retaining it for longer periods if desirable. An examination of urine made within six months found it practically normal.

"Yours very truly,"

Three Cases Respectively Eleven, Seven, and Six Years since Operation. Reported by their physician.

"Dear Dr. Packard:—

"I hope my delay in answering your letter has not caused you inconvenience. I have only today been able to see Mr. W. and Mr. I. Both say, and I may include myself in their category, that since their operations their bladder functions have been practically perfect; that their general health and comfort has greatly improved so that they have nothing to complain of. They wish me to give you their kindest regards and heartfelt thanks for the great relief you have given them and I also wish to join them in these sentiments.

"Very sincerely yours,"

Group of Cases Seven Years after Operation. A case, now 83 years, reported by his physician.

"C. F. S. Operated upon in 1911, is now living and enjoying most excellent health. He has practically perfect control. Age 83, and this past summer attended the Knights Templars Conclave at Los Angeles, Cal., making a trip of something over 12 000 miles, never missing a day or a meal."

Case, now 70 Years of Age, Living and Well.

"My dear Dr. Packard:—

"In reply to your question which reached me recently, I am delighted to say that Mr. E. made a magnificent recovery and has been in excellent health ever since. I have rarely seen a man who more deeply appreciates what was done for him in the way of relieving him from serious suffering. I hear from him only at long intervals because he is so well he needs no medical attention. I look upon his case as a most satisfactory one.

"Sincerely,"

Case, now 73, Six Years after Operation. Reported by his physician.

"My dear Dr. Packard:—

"I had a talk with Mrs. G. this afternoon. She tells me Mr. G. is quite well, that he urinates two or three times at night, and has no trouble otherwise with the bladder. She considers him a healthy man for 72 years of age.

"Sincerely,"

Case, now 76 Years old, Six Years after Operation. Reported by patient's physician.

"My dear Dr. Packard:—

"Your letter of Sept. 11 relative to Mr. F. came duly to hand. He is still living and as he says is 'very much alive.' As you will recall he was some length of time in healing at the abdomen—due, as you may now know, to disregard of advice against a too speedy return to business; his temperament rather than fault with the wound was responsible for the tardiness in closing.

"He had control of urinating long before the wound entirely healed, and has continued to have to now. He has been very comfortable since the trouble was removed; and so far as troublesome urinating was a factor in his general condition of health, it has long since ceased to exist.

"He is daily present at his place of business, which you will remember is blacksmithing, horse-shoeing and wagon-making and repairing.

"He is no longer active in the manual end of it, though if the occasion demands he gets into it for a brief period—his heart won't permit him to continue long at it.

"Yours most cordially,"

Six Year Case, now 67 Years Old. Reported by his physician.

"My dear Dr. Packard:—

"Pardon my delay in answering your inquiry as regards Mr. J. M. W. I have just received authoritative information.

"He is living. He regained perfect control of urination, and has retained it to present time. He was restored to perfect health and has not had a sick day since.

"Yours sincerely,"

It seems quite useless to prolong this paper by a continuation of these personal testimonials. In fact so many of those of the 5 year, 4 year, and 3 year periods are available, giving practically the same history that inclusion of more of them would be but a reiteration. Selection of cases of the 10, 9, 8 and 7 year periods has been made in order fully and finally to answer the question as to the "final results." It may well be noted here that the interrogator whose question inspired this paper expressed skepticism regarding the value of prostatectomy as a surgical procedure and confessed that he had received the impression that the immediate mortality was so great as to make it unwarrantable, while if recovery occur the patient lives at most not more than 2 or 3 years.

All this may have been true in the early days of prostatectomy when all cases which finally reached the surgeon were already so near dissolution from chronic cystitis, pyelitis, systemic toxæmia and back pressure that a large immediate mortality was inevitable and those who survived enjoyed amelioration of their most distressing symptoms but the damage of procrastination could never be fully repaired. It may be illuminating to record here what the ameliorations are which follow immediate recovery of a neglected case. These cases are those to whom the catheter has become a constant companion by day and by night. The operation releases him from catheter bondage, but it cannot free him from irreparable damage otherwise.

The term "neglected case" is one which used to come up frequently in connection with prostatics. It is a designation which as a rule fails to express the real state of matters. The "neglected case" is usually one which has not been neglected, but which has had too much of the wrong thing done and this often because of the obstinacy on the part of the patient in refusing to have the right thing done. A physician who devotedly attends upon his prostate case, irrigating his bladder and doing all he can to keep him comfortable, cannot be accused of neglect, but he is obviously devotedly doing the wrong thing because of the patient's pointblank refusal to have the right thing.

The following brief case history is an impressive illustration: A man of seventy and over had gradually increasing vesical consciousness. His family physician correctly diagnosed prostatic

obstruction and advised counsel looking to a prostatectomy. Blank refusal on the part of the patient resulted in many months of catheterization, bladder irrigation, cystitis, kidney inefficiency, and general debility. Finally a consultation was arranged and a diagnosis of prostatic obstruction confirmed, and in addition to that, stone in the bladder. The prostate was soft, elastic, smooth, movable — as favorable a condition for safe and effectual operation as ever existed. The enlarged prostate caused residual urine; the residual urine sedimented into a vesical calculus; the catheter and irrigation did the rest. Such a case may pull through a removal of the vesical calculus but removal of the prostate will be attended with peril because of the kidney inefficiency, cardiac weakness and systemic debility.

A question which rarely comes up relating to the remote effects of prostatectomy is "what of its influence upon the sexual function?" This is a matter of so little importance in the period of man's life affected that it looms very small indeed in comparison with the menace of prostatic obstruction and its attendant evils. Undoubtedly many men at the average age of prostatic hypertrophy are still virile sexually, *i.e.*, erection, penetration and ejaculation are still possible under normal stimulation. Prostatectomy makes no difference in those functional details except that the anatomical changes incident to prostatic hypertrophy and prostatectomy, change the direction of expulsion of seminal fluid into the bladder instead of out through the urethra. In the next passage of urine will be found an admixture of semen.

In critically examining my list of operated prostate cases for the past fourteen years and endeavoring to reach a reasonable estimate of the aggregate number of years of happy, comfortable, useful life which have come to them as an immediate result of the operation, there appears a total of not less than 175 years. This is an estimate based on a very low scale of figuring. The total number of years which the total number of cases have lived since operation is taken as a basis. This is cut in half to make a fair allowance for the possible average number of years the cases might have lived if unoperated. To this is added the probable number of years those now at the 1-2-3-4 and 5 year period may continue to live.

WHAT ABOUT HOMŒOPATHY IN THE SOUTH?*

CLAUDE A. BURRETT, Ph.B., M.D., College of Homœopathic Medicine, Ohio State University

The question which your speaker asks, "What about Homœopathy in the South?" like many another question, is more easily asked than answered. This is especially true when the answer, as in this case, must come from one who has scarcely ever stepped foot below Mason and Dixon's line. There are, however, certain angles of the question which may well be considered by one who has made some observations and study of the whole problem of homœopathy, especially with reference to its relation to our medical institutions.

The great question of the supply of physicians in general resolves itself around the larger problem of education, not alone of medicine but of all other professions and branches of learning. During the past quarter of a century we have been passing through a more general increase in interest in higher education. Engineering and agriculture, business administration and journalism have been coming into the foreground in the universities of the land. These newer professions have found larger opportunities for their output, and students have entered directly from the high school rather than be hampered by higher requirements beyond the high school.

During this same period the sciences underlying the art of medicine have been going through an unprecedented evolution and, in many instances, revolution. The great lecture rooms and amphitheaters in which splendid lectures were delivered in the past and where conditions and diseases were talked about and demonstrated to large groups of students have given way to the laboratory, the conference, the clinical demonstration and the research activities where each individual makes personal experiment, laboratory verification and original investigation. Classes in medicine have been cut from 200 to 20. The years of study have been increased from 2 to 6 and even more. A generation ago the requirement for medical study was a reading knowledge of English.

At the same time formal medical education has been taken from the usual educational control of colleges and universities and assumed by self-constituted organizations. It is safe to say that no other educational activity in existence is under the guidance of those who in no way are or have been identified with actual education. This control without doubt has worked for some good, but not without doing great harm and injustice. There has been need for medical reform but not at the expense of real medical progress as applied to the public. A larger percentage of the people today than ever before are doctored by those who are unschooled

* Read before the Southern Homœopathic Medical Association, November, 1917.

in medicine. The so-called drugless healers are rapidly coming into the saddle and present laws do not stop them.

Premedical education has been so surrounded by rules that very often the letter of the law has entirely superseded the spirit of preparation. There have been so many inconsistencies that a year ago, at the Chicago midwinter medical meetings, a few men from the general educational field took a very emphatic stand on the question of premedical education. A great college president truly said, "I am not so much interested in the men we take into our colleges as the men we graduate out of them."

The effect of this medical education "hubbub" has been, as those who created it desired, to cut the number of medical colleges in half and to affect the number of graduates in a like manner. May we say in passing that there is no doubt but that the desire was, as far as homœopathic colleges is concerned, completely to eliminate them from the medical horizon. The result, as far as homœopathy is concerned, has been to drive together and bring about an increasing desire among our colleges for greater efficiency and higher places in the great field of medicine.

The prospective medical student has been the problem. He has been obliged to face a much longer period of study, greater expense while in college, and then has been advised that the field was overcrowded when he did finally finish a hospital course.

The South, during this period of educational transition, has likewise been going through a period of physical reconstruction. It is obvious that our southern colleges affected by the medical oppression of all our colleges, plus the general conditions of the South, should be among those unable to endure. It is interesting to note, however, that out of those same colleges men have gone into the South, many of whom have been the outstanding figures of our profession. With the colleges at Baltimore, Louisville, St. Louis, Denver and Kansas City gone, the stream of men and women to the South must lessen or stop altogether unless immediate steps are taken to meet the crisis.

The solution of the problem may be attained in two ways: the reestablishment of one or more of the above institutions or adequate provision for students of the South in our northern colleges. We are convinced of one point. In most instances the South must find its doctors among its own people. A few will go to the South from the North immediately after graduation for personal reasons. Occasionally a northern physician will go into the South in semi-retirement, but neither of these classes will maintain homœopathy in the South. It must be done by the native southerner educated in our homœopathic colleges.

The ideal would be a man or woman with large enough vision and a million dollars with which to establish a college in the South,

What greater benefaction than the establishment of a college for the education of young men and women to serve their generations in time of physical ills, a hospital devoted to the service of the people when stricken by disease; and a training school for nurses which would be a blessing to thousands? Homœopathy could do a wonderful work for the people of the South through such an institution. The worthiness of such a cause and the need for it is great enough for the most ambitious philanthropist.

In the meantime our profession must not sit by and wait for something to happen. Under such conditions the wrong thing happens. We must organize to meet the situation. To do this every homœopathic doctor of the South must be enlisted, not only that, but every part of the country bordering the South, even from Oregon to Maine, must be urged to help. Homœopathic literature must reach the people of the South. We must cease to use exclusively propagandistic literature that is from fifteen to twenty years old and create new material out of the present time. Money must be forthcoming to assist in the education of students. Scholarships and education funds must be created for this purpose. Medical education, which contributes directly to the lives of the people, is the most expensive form of training. It is surrounded by traditions and ethics, it is building a fence around itself over which it is unable to see and really to discover the needs of the great mass of people. In the meantime the public is looking to healers of other faiths for help. In addition to the work which the profession at large may do, our colleges must do more and better work than ever before. It is said that in these times of great achievements there is money for every going cause. One only needs to glance at "Science" each week to see, even in these war times, the millions that are being daily put to some educational activity. What do our colleges need more than anything else these days? It is the desire to learn new things or to add to our knowledge of the known. No college can exist whose sole purpose is to teach the known. If we would attract minds and money we must cultivate the spirit of research. Men and women do not remember things learned at college, they do cherish memories of men and women who gave them an inspiration for learning.

While every department of our colleges should do its share in the field of investigation, the foundation in our homœopathic colleges can well be established in two departments. The departments of therapeutics and diagnosis, each well equipped and manned, can form the basis for researches in not only their own but in every other department of a college. The department of therapeutics will be equipped for work in physiological chemistry, experimental physiology and pharmacology as well as minor equipment in pathology and bacteriology. By such an equipment it offers opportunity

in the various branches of surgery and internal medicine for animal as well as human experimentation. The properly equipped department of diagnosis will include clinical microscopy, pathology, bacteriology and röntgenology as well as provision for physical examination.

The spirit of research as applied to a homœopathic institution does not content itself alone with experimentation with our known therapeutic agencies. It does mean research by a man or woman who has a thorough knowledge of homœopathy as a background, by one who is able to carry on and make greater use of the principles of homœopathy. Not to worship *similia similibus curentur* but to use it as we do any other information. The spirit of research does not seek alone to verify a known truth. On the other hand, it uses known truth to be a guide in making new discoveries.

With such a spirit our colleges and hospitals will attract workers and means.

We shall be preparing to meet the new conditions of a new world sure to follow in the reconstruction following the war.

We shall attract students from the South who will return to their homes to send others to our colleges.

The only kind of propaganda that will be lasting must have a background of real constructive homœopathy.

The intelligent youth of the South will only be attracted to the homœopathy that is progressive and seeking after new truths. The only true follower of Hahnemann is the one who backs his loyalty for the founder of homœopathy by making use of every twentieth century discovery as Hahnemann would do were he living in this generation.

TREATMENT OF HYPERTENSION*

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Some fifteen years ago, by the publication in the lay press of the experiments of D'Arsonval, the public was educated to the fact that there was such a thing as blood pressure and aging arteries. Later, through the efforts of Moutier, physicians — or at least some of them, began to realize that there was hope of producing real and relatively permanent results in such conditions; results which the iodid and nitrite treatment had not been able to achieve. This new agent was the high frequency current.

From the results of much experimentation of such men as D'Arsonval, Tesla, Sir Oliver Lodge, Thompson, Moutier, Freund, Strong and Nagleschmidt, the following are shown to be some of the physiological effects of high frequency currents:

The high frequency currents have little or no effect upon the

* Read before the N. E. Association of Physical Therapeutics.

sensory or motor nerve system, for, just as in sight or in hearing the scale to which those nerves respond is restricted to certain wave lengths, vibrating at certain speeds, and beyond is darkness, or silence, so, when our high frequency currents with their countless wave lengths, vibrating at great rapidities, impinge upon the motor or sensory nerve, there is no reaction. But with the sympathetic nerve system immediate response is apparently obtained. There are increased tissue changes; more rapid oxidization takes place and quicker reduction of oxyhæmoglobin. There is increased elimination of waste products in the urine; there is special action on protoplasm of tissue cells everywhere increasing the rapidity of their natural chemic changes, and special effects on bacteria, ferments and animal poisons. The oxygen-carrying capacity of the blood is increased, as well as the amount of hæmoglobin. Carbon dioxid is increased from seventeen to thirty-seven liters per hour. In some cases the urea has been immensely augmented (more than doubled), while at the same time the uric acid has decreased, or is nearly absent, thus showing that the nitrogenous matter has become more completely oxidized in the system. Phosphoric acid, also, is present in larger amount in the urine, while the peripheral circulation is made greater in quantity and in rate of flow. Locally there may be superficial analgesia, or anæsthesia of the skin with decrease of excitability of nerves and muscles. Warmth and perspiration are induced and surface temperature is locally raised. The effects on the sympathetic nerves, controlling vasomotor, secretory, thermogenic and peristaltic functions may be often readily observed. Though no direct effect can be absolutely proved, yet the application of high frequency to any muscle or nerve does in some way affect it, as afterwards its excitability to galvanic and faradic stimulation is lessened. In short, we have in high frequency a means of influencing metabolism as shown by increased elimination, lowering of blood pressure, and a general sense of well-being in the patient. When we consider the meaning of hypertension we shall see the rationale for the employment of high frequency. Hypertension is regarded by many of the authorities as autotoxic in nature. In the earlier stages the high arterial tension is due to vasomotor spasm caused by the auto-intoxication, which acting through many years is likely to cause structural changes in the walls of the vessels, and in every organ of the body. We can readily see that with increased resistance there is more work thrown upon the heart, which in time will produce myocardial change. The natural elasticity of the arteries is lessened; there is impairment of the circulation in the musculature of the arterial walls, and lime salts are more readily deposited, due to sluggishness of the blood current; and the artery finally becomes the classical "pipe stem." Meanwhile more work has been thrown

upon the kidneys, and at a higher pressure they, too, suffer from the toxic blood, and degenerative changes take place in them as well. Perhaps though, before this happens, the terminal arteries in the brain give way and apoplexy supervenes.

As yet, our knowledge of the meaning of "blood pressure" is more or less incomplete. What is normal? Why should one individual with a systolic of 180 have many symptoms, while another with 220 feels very comfortable? Within what limits is there a purely physiological variation? From ten to thirty mm. are the various estimates.

The height of the diastolic pressure is often more important than the systolic; it is less subject to temporary variation, and it further indicates the resistance which the heart has to overcome. It is more of an index to the main pressure than is the systolic. A constant diastolic pressure of, or above, one hundred indicates hypertension, regardless of whether the systolic pressure be 180 or 140. Norris says, "Under normal conditions we find the systolic pressure about 120, and the pulse pressure, therefore, 40, thus the amount of energy expended in maintaining the circulation in excess of that required to open the aortic valve and overcome the resisting pressure of 80 is 40. The normal load, therefore, may be considered $40/80$ or 50 per cent. of the diastolic heart pressure. Applying this conception to hypertension, it is apparent that a systolic and diastolic pressure of 170 and 100 mm. yielding a pulse pressure of 70 would furnish a heart load of $70/100$, or an over-load of 20 per cent. The heart beating at the rate of seventy times per minute, 4200 times an hour, 100 800 times daily, would pump on an average of 2.5 ounces of blood at each contraction, 175 ounces a minute, 656.4 pounds an hour, or 7.5 tons a day. Since about ten pounds of blood are pumped by the heart per minute, increase of pressure must call for the expenditure of an enormous amount of cardiac work. That many of the cases of hypertension have an autotoxic basis can easily be demonstrated. We know that in pregnancy where there is danger of eclampsia, the rise of blood pressure will give warning before the urine shows definite signs. Workers with lead generally show an increased pressure even when there have been few, or no, attacks of colic. Users of morphin, because of the diminished excretion, have, as a rule, an increased pressure. In renal and biliary colic, because of the arterial spasm, the pressure is above normal. Syphilis and malaria are apt to raise the pressure.

There are two factors concerned in the production of arterial hypertension: first, the basic or essential factor, the point to which pressure must be raised to maintain metabolism, and second, a superadded, or toxic, factor, resulting from faulty habits of life. I have found that the pulse pressure is important, as when compensation has been established, *i.e.*, when the pulse pressure is

fifty per cent. of the diastolic, even though both the systolic and diastolic are high, the individual seems symptomatically to be comfortable, though, of course, the prognosis is bad as to the ultimate outcome. These cases seem to have some underlying organic fault, such as renal involvement, hence the high pressure is purely compensatory and should, therefore, not be treated at all, or with caution. This probably answers the question as to why one individual with 180 systolic may be uncomfortable, while another with 220 may have few or no symptoms. It has been contended that the high blood pressure is compensatory and that any attempt to lower it is dangerous, and disturbs the natural balance. This may be true in part, but fundamentally the autotoxic elements are the cause. Remove them and any need of compensatory change is obviated.

I do not mean to infer that all we need to do is to use high frequency regardlessly in any case of hypertension. We should not; we should seek the ætiology as carefully, or more carefully, than we would if we had only drugs to depend upon. The urine should be examined qualitatively and quantitatively with the greatest care. The personal habits of eating, drinking, exercise, smoking, and any excesses, should be carefully gone into. The bowels should be regulated. The mental or physical strains should be considered. Intelligent electrotherapeutics demands a careful history and examination, a well-defined picture of the pathological conditions, a well-grounded knowledge of the physiologic effects of the different electric modalities, and sound judgment and common sense in applying them.

The psychic element is often a factor in these cases, and hence the practice of giving patients the before-and-after-treatment figures is bad. I have had patients come in with voluminous records covering many years, and often the reading I get is much higher than that given the patient. This is disturbing and will often cause an element of doubt to enter the patient's mind — doubt as to whether you or the other man has told the truth. Also a rise in pressure will cause discouragement, though there may be good reason for it, and it may be only temporary.

The chief contra-indication to the employment of high frequency is an advanced stage of parenchymatous nephritis, where a high pressure is an absolute essential to the secretion of urine. I have never seen any heart lesion made worse by high frequency, while, on the other hand, I have seen cardiac distress and even angina pains greatly ameliorated.

The treatment may be given in one of several ways. First, autoconduction, where the patient stands or sits in a spiral cage composed of fairly coarse wire with no direct contact but with the current induced in his body in much the same manner that a current

is induced secondarily in the spark coil on your automobile. This is the French method.

Second, autocondensation. Here the patient reclines on a couch, well insulated by a heavy mattress from a metal plate which is connected with one pole of a high frequency machine, while in both his hands he holds a metal rod connected with the other terminal of the machine. This is the American method, and combines direct connection and induction.

Third, local application. By the application to various parts of the body of the low vacuum high frequency electrode, sometimes called "the violet rays." By this method alone, Dr. Horace Arnold, dean of the Harvard Graduate School of Medicine, treated successfully over two hundred cases of high blood pressure.

Fourth, diathermy; this has been applied by Nagleschmidt, either as præcordiodorsal to raise pressure by cardiac stimulation and cutaneous irritation, or to lower through peripheral dilation by application to the central nervous system (medulla). If the heat effect alone was the factor this should have been the best to obtain the most lasting results, but so far it has not.

Autocondensation is the method generally employed, and it has been my experience that from 250 to 500 ma. every other day from 15 to 20 minutes is the best routine treatment; treatment is to be continued until the normal blood pressure has been reached, or that point beyond which it is impossible to lower it permanently has been attained. The blood pressure is lowered from 5 to 20 mm. of mercury at each treatment. There is generally a rise from 3 to 10 mm. before the next treatment, but gradually the pressure sinks lower and lower, with fewer excursions, until the normal has been obtained. This may take few or many treatments, but as a rule the slower subsiding ones show less rise between times and are more permanent. The results may be summarized as follows — (a) In the majority of cases the blood pressure is relatively permanently lowered. I say "relatively," for some cases I have seen two years afterwards have shown only 10 to 15 mm. rise. Moutier reports some of six to eight years standing with no increase. Of course, under proper hygienic and dietetic precautions there is infinitely less possibility of increase. (b) Some cases drop, and soon come back to a higher point, remaining there, but not to a degree comparable with their first high pressure. Symptomatically they are cured. (c) Some cases absolutely refuse to be lowered, but they, too, may symptomatically feel much better; the vertigo has disappeared, shortness of breath decreased; the inability to concentrate attention has diminished; the headaches are fewer, and sleep, hitherto a scarce commodity, is much improved. During treatment the patient will frequently sleep and on awakening feel much exhilarated and refreshed. (d) There are still other cases

where no effect whatever has been produced. We should not fall into the error of considering high frequency as the only treatment needed in these conditions, it should be considered only as an adjunct.

The diet is all-important and should be lactovegetarian in the main, and limited in quantity so as just to supply the nutrient and caloric requirements. If meat can be tolerated, I give either red or white, only limiting the quantity.

For constipation and so-called indigestion, I often use the sinusoidal current as I would for constipation alone. Only after a combined high frequency and sinusoidal treatment care must be taken to eat very sparingly, as otherwise more material will be thrown out into the system than can be eliminated through the natural channels. When the cardiac muscle is fairly good, exercise is indicated, and golf has furnished a "sugar coating" for such a procedure. When only very limited exercise can be advised a general vibratory or sinusoidal treatment, or massage, is indicated. Hydrotherapy may do good, but it is also capable of doing great harm, and hence should be employed with extreme caution.

I have seen very little effect from the various medicinal agents recommended and have employed them but little.

My experience with radio-activity has been disappointing and as far as I can learn no uniform results (except, perhaps, many failures) have been obtained.

The Bulgarian bacillus has seemed to me to be a very useful adjunct to treatment, and I am using it in a majority of my cases.

Perhaps a few case reports will not be amiss.

Mr. A., manufacturer, 58 years, married, habits as regarding eating, alcohol, and exercise extremely bad. Blood pressure 230. After first treatment blood pressure 200 mm., after eight treatments blood pressure ran from 150-155 mm. After seventh month, despite the fact that he still maintained his old method of living, blood pressure was 155.

K., professor in one of the nearby colleges, 67 years. Mode of living careful in the extreme. Told by several prominent Boston physicians that with a blood pressure of 270 little could be done for him. After five months of hard treatment blood pressure was 200. He went abroad and remained nine months, returning with a blood pressure of 230. Now, after a year's vigorous treatment, averaging about twice a week, his blood pressure is around 180, but symptomatically he is well. He says he is able to do his regular work and enjoys teaching more than ever before in his life.

Mrs. G., laundress. About 62. Blood pressure at start, 290, plus! After two years' steady treatment blood pressure is 210, she is symptomatically cured, with the exception that at times there have been attacks of dizziness and nose-bleed. No treatment for several years, and pressure has remained 230-240.

Mr. X., postmaster. About 53. Was sent to me for blood pressure of 200 with pain radiating down left arm from præcordial area. After twelve treatments blood pressure was 140 and pain some better but not entirely absent. Examination of blood showed low index to pneumococcus, and a few injections of vaccin entirely removed pain. Since then he has reported at various intervals but never with blood pressure over 160.

Mrs. H., 72. Blood pressure 210. Advanced state of parenchymatous nephritis. She complains bitterly of headache which was temporarily relieved

by nitroglycerin, treatment by autocondensation lowered blood pressure 15 mm, and relieved the headaches. After three treatments she promptly died; death, due in part, I believe, to too rapid lowering of a true compensatory pressure.

Mr. L., wholesale drygoods man. About 60. Blood pressure 190-195 with considerable shortness of breath, vertigo, præcordial pain, habits good, except in regard to eating. Blood pressure lowered after eight treatments to 135 mm. Since then has varied 135-155. Pain, dizziness, and shortness of breath have disappeared.

Cases might be multiplied indefinitely. Yet there is another side, those patients whom we are not able to benefit, and as all of us know, we do every little while see such cases — cases in which apparently there is no contra-indication to treatment, when the urinary examination shows no renal involvement. These, to my mind, are the most interesting, and after I have collected a sufficient number, I hope to write a paper on "failures" in the treatment for hypertension and the causes thereof.

591 Beacon Street.

COLD STORAGE*

M. C. BRADBURY, A.B., B.U.S.M. 1919

Cold storage is storage in refrigerating chambers artificially cooled for preservation of articles liable to be damaged by heat. Storage of this kind is a very important factor in the distribution of the food supply in this country. Its function is two-fold. First, it preserves goods in their transit to market to meet current demand. Second, it preserves goods through the interval between flush seasons.

The leading commodities subject to cold storage are perishable foods of seasonal production such as eggs, fresh meat, poultry, fish, fruit, butter and cheese. The function of cold storage is to carry the surplus supply of the flush season over to meet the shortage of later months. In this respect cold storage acts as a reservoir supplying the demand of the market when nature fails.

The modern system of mechanical refrigeration is the result of a long series of inventions extending over the last century and a half. It is possible within the limits of this paper to point out merely a few of the milestones in the progress of producing artificial cold for refrigeration.

Over three hundred years ago it was discovered that when certain salts were dissolved, artificial cold resulted from the chemical action. Fahrenheit, in 1762, made use of this combination of ice and salt when he placed the freezing point of water at 32 above zero.

About the same time, scientific experiments were being

* Thesis submitted in Sanitary Science, Hygiene and Preventive Medicine, B.U.S.M. 1917.

made to produce evaporation and refrigeration by the vacuum method. Using this principle, Dr. Cullen in 1775 invented the first ice machine; a machine which, by reducing the atmospheric pressure by air-pump and by increasing the evaporation of water, produced ice.

The affinity of sulphuric acid for water was next discovered and was applied by Leslie in 1810 to make ice. In 1834 Perkins patented the first machine capable of producing ice in commercial quantities. This machine was the direct forerunner of the modern compression apparatus, ether being the refrigerating agent employed. Thus was the brine, or indirect system, foreshadowed.

In 1856 Harrison constructed a sulphuric ether machine which was an improvement upon that of Perkins. The next important step was the invention of the ammonia absorption process by Carré in 1860. This machine was subsequently improved by various inventors. This was followed by the brine circulating system by Tellier in 1873.

The methods of refrigeration used in modern cold storage plants are of two kinds, in both of which ammonia is used as the refrigerating agent. In the system of direct expansion, ammonia is pumped directly into pipes running through the storage rooms. In the system of indirect expansion, or brine circulation, ammonia is used to chill the brine, which is then circulated through the pipes. The former method is used in fish-freezing plants, the latter for ordinary storage purposes where quick freezing is not an important consideration.

The first cold-storage room in this country was constructed in 1865 in New York City, for the purpose of fish storage. The method of freezing differed from earlier processes in that pans of fish were placed between tiers of brine-filled pipes instead of being immersed directly in salt and water.

The frozen meat industry dates from the early fifties. The cold storage of fruit was first made commercially successful by Nyce in 1856.

The quantity of perishable food products placed in cold storage is comparatively small in proportion to the total production. The percentages of the total production of different classes of such commodities are estimated as follows:—

Eggs	13.5 per cent. of production per year
Beef	3
Mutton	4
Pork	11.5
Butter	25
Fish	8

It would be fair perhaps to state that according to available testimony less than 10 per cent. of perishable food products pass through storage.

It is commonly thought that goods are generally held for long periods in cold storage. According to the report of the Secretary of Agriculture, the percentage of food products held in storage for more than one year is so small as to be practically negligible.

The subject of cold storage divides itself into two main branches of inquiry; first, the effects of cold storage on the health of the people; second, its effects on the cost of living. The latter inquiry, that of the economics, can not be considered in this paper.

It is charged against cold storage that it is a menace to public health because it allows dealers to hold food products until they become unfit for consumption. Goods kept by refrigeration are declared to be inferior to fresh food in quality, wholesomeness, and palatability. Also that food held for long periods upon consumption produce various disorders.

The charge that cold storage is detrimental to public health is ably refuted by an examination into this subject held by a commission appointed by the Governor of Massachusetts in 1912.

From investigations thus made with respect to the effects of cold storage on food, two general conclusions were reached: "First, that there is loss of flavor when storage is prolonged beyond a very short period; second, that although there is no essential loss of wholesomeness during considerably prolonged periods of storage, there is a change in taste, flavor, and palatability which is detrimental.

From the studies of the effects of cold storage on chickens summed up in a pamphlet issued by the Department of Agriculture in 1908, it is stated that:

"First, microscopic observations of fresh and cold-stored chickens show that certain plainly visible differences exist between the two classes, which differences are progressive depending on the length of the storage period.

"Second, chemical analyses have served to show that for the protein distribution there is a slight variation in the cold-stored product from the fresh, for the fat values a wide variation.

"Third, a histological examination of the muscles of both fresh and cold-stored chickens shows a marked and progressive change in the structure of the fibres which is deep seated, and after long periods renders the tissues almost unrecognizable. Selective microchemical differentiation of the tissues confirms the chemical change found by gross analytical methods.

"Fourth, a bacteriologic examination reveals the presence of appreciable numbers of organisms, calculated on the gram basis, in the edible portions of those preserved by cold, though the numbers were not large. In fresh fowls the same technic gave no bacterial growth."

General results of organoleptic tests lead to the conclusion that for a short time, possibly six weeks, there is no perceptible change produced in a chicken by having it frozen. There is no evidence that it is better. There is no convincing evidence that it is any worse. After three months fresh chicken is easily distinguishable by its properties from the cold-storage chicken both before and after cooking.

The general conclusion is that in the case of frozen birds there is no indication of any improvement in quality during cold storage, though there is a deterioration which is noticeable at the end of three months and which increases as time goes on.

From the Bureau of Chemistry the following observations on the keeping of eggs are contributed: "First, eggs in storage for one year show a loss of weight equivalent to 10 per cent. of the total weight, which loss is largely water from the whites.

Second, eggs after storage for 16½ months lose their power of cohesion and emit a characteristic musty odor a few hours after opening. The principal changes occurring are a lowering in the amount of coagulable proteid, a change in reaction and a lowered percentage of lecithin phosphorus and an increase in the lower nitrogen bodies, proteoses and peptones."

The results of the investigations on the subject of butter and cheese have very little significance for the purpose of inquiry into the general effects of cold storage on health. It is generally admitted that butter and cheese do not undergo such a degree of deterioration in cold storage as to involve danger to public health. Butter would probably never become injurious to health in the sense that it would become toxic or poisonous from prolonged storage.

A review of available information bearing on the question of the effects of cold storage on food products appears to warrant the following conclusions:

First, a progressive deterioration takes place in perishable food products kept in cold storage.

Second, the deterioration first appears in a change in flavor which does not necessarily affect its wholesomeness.

Third, the length of time during which an article can be kept wholesome and fit for consumption varies for different commodities.

Fourth, the period of proper preservation depends on the methods of handling and preparing for cold storage.

Fifth, scientific investigation in this field is not advanced enough to fix normal time limits of cold storage for different commodities.

Sixth, cold storage beyond one year is undesirable to public health.

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"*Wholesome Food.*" H. S. Finck. Century Magazine, Nov., 1911

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EDITORIAL

BOOKS for review, exchanges and contributions — the latter to be contributed to the *GAZETTE* only and preferably to be typewritten — subscriptions and all communications relating to advertising and other business should be sent to THE NEW ENGLAND MEDICAL GAZETTE, 80 East Concord Street, Boston. Make checks payable to THE NEW ENGLAND MEDICAL GAZETTE.

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CHANGES IN THE EDITORIAL STAFF

With the advent of its fifty-third year the *GAZETTE* records the following resignations from and additions to the staff.

Mrs. Lillian G. Knowles, who for eleven years has contributed so generously from her time and strength to the welfare of the *GAZETTE*, has given up her managerial duties to enter the national service and thereby becomes enabled the more intensively to devote herself to the interests of the government in the present crisis. Loyal to the *GAZETTE* should not fail of fruition because of his untimely death, she has striven through long hours of tedious, poorly encouraged and inadequately remunerated effort devoted to the interests of this publication. The discontinuance of her association with the *GAZETTE* will be felt profoundly both by editorial staff and subscribers.

Dr. Arthur H. Ring, after seven years of constantly active and sincerely interested service, has found that the increasing stress of his professional activities has become so great as to preclude the possibility of his being able conscientiously to carry on his editorial labors. We, his associates, regret deeply that his retirement has become necessary; we find it a pleasure, however, here to express our appreciation of his material contributions to our pages and our gratitude for his ever friendly and helpful counsel, which he has promised shall still be available.

A few months ago the name of Winfred Overholser was added to the list of associate editors. Dr. Overholser received his A.B. from Harvard and his M.B. (1915) and M.D. (1916) from Boston University School of Medicine. After serving for a year as resident physician in the Evans Memorial he entered

the Westborough State Hospital as Assistant Physician in order to extend his experience in the psychopathic and institutional fields wherein he intends to do his life-work. Possessed of a broad training, a keenly analytic mind and a facile pen, he comes into journalistic work with purposive enthusiasm, and we feel that the GAZETTE may well be congratulated on having acquired his services.

In this issue a name familiar to the whole homœopathic profession of the United States and well-known abroad, Dr. Ralph R. Mellon, appears on our editorial staff for the first time. Dr. Mellon graduated from Grove City College with the degree B.Sc. (1901), University of Michigan M.D., Homœopathic department (1909), M.Sc., (1912), and obtained the degree of Dr. P. H. from Harvard Medical School in 1916. He has done extensive graduate work in pathology, bacteriology, protozoölogy, serology and organic and physical chemistry under such noted men as Novy, Rosenau, Warthin, Gomberg and Bigelow, and for some years was Instructor in Physical Diagnosis, Director of the Laboratory of Clinical Pathology and Assistant Professor of Clinical Pathology at Ann Arbor. At present he is Director of the Laboratories at Hahnemann Hospital, Rochester, N. Y.

Dr. Mellon's major publications embrace the relation of fatigue to paralysis localization in plumbism, studies on the streptococcoses, Hodgkin's disease, and the diphtheroids.

To homœopathic literature he has also made a number of noteworthy contributions with which undoubtedly most of our readers are familiar. In his research work and in his papers Dr. Mellon has shown himself to be a remarkably clear thinker and an equally clear expositor of his thought; his problems have been strikingly posed, his arguments forcefully presented, his conclusions logically drawn. It is with intense satisfaction and high anticipations that we offer our pages to his editorial capacities.

S. B. H.

CLINICAL DEPARTMENT

A case of anaphylactic shock following injection of diphtheria antitoxin.

Anaphylactic shock following injections of diphtheria antitoxin is rare. The Boston City Hospital reports an average of one case in 4000 administrations. The following is a report of the first case occurring at the West Department of the Massachusetts Homœopathic Hospital in the nine years of its existence.

Mr.—, aged 24, on July 21, 1917, complained of sore throat,

smear from which did not show Klebs-Loeffler bacillus; headache, malaise and difficult deglutition followed, and in twelve hours a definite, characteristic membrane appeared on the left faucial pillar above the tonsil; smear and culture now showed *bacillus diphtheriæ*. Homœopathic medication given to arrest the process had no appreciable effect, and ten hours later spots appeared on the opposite tonsil with œdema of the uvula. At this time 45 000 units of diphtheria antitoxin were administered subcutaneously in five successive injections along the lateral side of the back.

No unusual discomfort accompanied the first four injections, but immediately following the fifth the patient experienced a prickly tingling sensation along the edges of the tongue, immediately spreading over it and appearing in the palms of the hands and the soles of the feet. In less than a minute on the whole surface of the body was experienced a prickly, tingling, burning heat accompanied by numbness and intense itching relieved by rubbing rather than by scratching. The patient sat up in bed complaining of the intolerable itching. At the same time the pain in the throat became negligible, and the hitherto nearly impossible deglutition became easy with notable salivation.

The pulse synchronously showed poor quality and became impalpable; the pulmonic second sound became weak and irregularly intermittent, while the aortic second sound was lost entirely, and the systolic first sound at the apex could not be heard by careful stethoscopic auscultation.

With the appearance of these cardiac changes the lips became œdematous as in angioneurotic œdema, and reached three times their normal size; the skin over the forehead became œdematous and the eyelids puffed.

A brilliant, uniform exanthem resembling scarlet fever rash spread over the entire body; the eyes became prominent and staring with as marked a conjunctivitis as is seen in a severe case of measles; the patient appeared and acted dazed.

Projectile vomiting of thin acid curds, unaccompanied by nausea, followed the appearance of the rash. With the vomiting appeared a dry cough, the patient complaining that the burning, tingling sensation was spreading over the inside of the chest and then through the abdomen. This was probably an extension to the pleuræ and peritoneum.

With the onset of the vomiting the cardiac condition improved, the systolic first sound returned at the apical area, the aortic second sound became audible and the arrhythmia diminished.

The entire body became bathed in cold perspiration, and this was accompanied by a pronounced, uncontrollable, clonic tremor which shook the bed by its violence and involved the whole body with the exception of the muscles of the face and of mastication.

The vomiting and tremor lasted periodically for two hours, the patient dozing in fitful naps during the intervals.

The only medication attempted was two doses of aconite 2x, two drops in water, at fifteen minute intervals; this was vomited and was probably without effect.

Subsequently the case showed an uneventful recovery, suffering one slight relapse; the rash disappeared within an hour and with it the itching and perspiration. The diphtheria followed the usual course of a severe bilateral tonsillar diphtheria having radical antitoxin treatment. The heart remained arrhythmic for two weeks and for the following two weeks was susceptible to changes with deep respiratory excursions and on any exertion; no murmurs were definitely determined and none persisted during convalescence.

The onset of the above symptoms immediately following the antitoxin administration naturally leads one to the assumption that the condition was entirely due to that agent. The family history and previous history of the patient showed neither unusual susceptibilities nor asthmatic tendencies, nor could any facts be elicited regarding previous horse serum treatments. Yet the picture of the case in its acuteness and mode of onset is one typical of anaphylactic reaction to a foreign animal protein. The rapid appearance of the symptoms show early response of the body to subcutaneous administrations of diphtheria antitoxin. The cutaneous sensations, the rash and perspiration all point to the supposition that the condition was one of acute vasomotor involvement, apparently a systemic vasomotor dilatation resulting in cutaneous urticaria, followed by a similar involvement of the serous membranes — the pleuræ and peritoneum; the later reaction affecting the sweat glands was due either to involvement of their vasomotor mechanism, causing vaso-dilatation and consequent increased blood supply, or to direct stimulation of their secretory fibres, or both. That projectile vomiting appeared without nausea and consisted of apparently normal gastric contents, is explainable on the ground that an urticarial enanthem similar to that found on the skin involved the gastro-intestinal mucosa and that the vomiting was a direct result of that irritation.

To explain the cardiac symptoms many hypotheses may be attempted; the most tenable one is, perhaps, based on the same vasomotor disturbance resulting in acute vasomotor dilatation with sudden acute cardiac ischæmia (although no anginal symptoms of insufficient cardiac nutrition were noted) and probably with an acute temporary stretching or dilatation of the cardiac musculature; at least sufficient weakening to make the ventricular systoles inaudible, to reduce the aortic tension below the normal and to cause the presence of an arrhythmia from temporarily insufficient or improper innervation or inability of the cardiac

muscles to respond to proper innervation. Assuming vasomotor disturbances elsewhere, it would be reasonable to expect them here. It is lamentable that the acuteness of the condition precluded a more thorough investigation; there was not time for blood pressure determinations, and we do not know what effect the vascular changes may have had on the systemic pressure.

Prognosis of such a case is uncertain; cases surviving the initial ten minutes are said invariably to recover; it is conceivable that complications could arise from a persisting cardiac condition or from diphtheric sources.

Treatment, if it is to be of any service, must be immediate. From a homœopathic standpoint, aconite seems indicated by the acute onset with restlessness, fear of death and tossing about; by the acute conjunctivitis and swollen lids, the flushed face with the tingling and numbness, the profuse sweat which followed and the sudden œdema about the lips; by the vomiting without nausea but with a sense of burning through the gastro-intestinal tract; by the oppressed breathing and the dry cough with its tingling inside the chest; by the palpitation and the universally hot red skin with its burning, tingling numbness followed by cold sweat and spasmodic rigors. Physiologically a vasoconstrictor would appear indicated and atropin sulphate gr. .01 and adrenin subcutaneously are said to be advantageous.

Best of all, of course, is prophylactic care in the administration of diphtheria antitoxin, particularly to an adult, because most reported cases have occurred in adults. A history of recent or even remote horse serum therapy or of "horse asthma" or similar susceptibility to equine proteins should be regarded with suspicion, and the patient's possible sensitiveness to horse serum should be determined with a few small and increasing doses before a large (and, perhaps, lethal) dose is attempted. Although anaphylactic shock after injections of diphtheria antitoxin is infrequent the possibility of its occurrence should be remembered and its prevention and management studied by the physicians making use of antitoxin therapy.

Reported by Harold L. Leland, M.D., Intern M. H. H.

REVIEWS

DIAGNOSIS

The Cerebrospinal Fluid in Anterior Poliomyelitis. Report on 108 Cases. Overholser, W. Boston M. & S. J. 1917, clxxvii, 480.

This study of spinal fluids was made in connection with the evaluation of relative merits of various methods of treating anterior poliomyelitis cases at the West Department of the Massachusetts Homœopathic Hospital.

In all 221 punctures were made. The results of the spinal fluid examinations tally more or less closely with those obtained by other observers, *viz.*, in the early postparalytic stage of anterior poliomyelitis the spinal fluid usually shows a moderate lymphocytosis and slight to moderate increase in pressure and globulin content; Lange's colloidal gold test shows a reasonably constant curve (1123331000) of some diagnostic value; the entire spinal fluid picture, however, is far from pathognomonic and does not in itself justify a diagnosis.

O. points out the value of laboratory procedures to the clinician but warns those for whom the laboratory, "instead of being, at the most, a staff to lean upon, has become a sort of mental perambulator."

H. U.

Ætiology of Iritis. Lang, W. Arch. Ophthalmology, Nov., 1917.

In an analysis of 200 cases of iritis in his practice, L. found that the causes and their percentages were as follows: syphilis, 6; gonorrhœa, 12; tubercle, 11; general affections, 8.5; other causes, 25.5; pyorrhœa, 37. Hospital figures would probably show a higher proportion for syphilis than 6 per cent., though recent methods of treating that disease would probably place that disease lowest in the causes. The percentage for gonorrhœa was also probably low compared with hospital statistics, but recent knowledge of that disease, resulting in the treatment of the genito-urinary system where the gonococcus was so apt to lurk, would largely prevent gonococcal iritis. Relapses in cases of iritis seemed to be largely due to pyorrhœa. In his series, the sexes were equally affected where tubercle was the cause. Tuberculous iritis cases should be treated on the same lines as subjects of tubercle elsewhere, plus local measures to subdue inflammation and prevent closure of the pupil.

In 17 of the cases the patient had either gout, or diabetes, or herpes of fifth nerve, or influenza, or pneumonia. Ten had a septic focus on the skin or a mucous surface or cavity. Six had disease of tonsils, 23 some affection of the alimentary tract, and 7 had trouble in the genito-urinary system. In one patient the iritis followed a smart blow on the eye, and another had iritis as a sequel of sympathetic ophthalmia. In 74 of the 200 patients there was no discoverable cause except pyorrhœa. Removal of the defective teeth or stumps was followed by a rapid clearing up of the iritis. In 22 other cases pyorrhœa existed as a complication of other conditions. Of the 74 cases with pyorrhœa alone, the women were twice as numerous as the men. As 48 per cent. of the patients had septic mouths, the practical aid of the dental profession would be of great value.

D. W. W.

Some observations on the Barany tests as applied to aviators. Babcock, H. L., Boston M. & S. J., 1917, clxxvii, 840.

The principle underlying these tests is movement of the endolymph in the semicircular canals in one direction, which movement stimulates the sensitive hair cells in these canals and produces: 1. nystagmus; 2. vertigo; 3. so-called "past-pointing"; 4. falling reactions. The endolymph is set in motion either by turning the subject in a smoothly revolving chair or by douching the ear with hot or cold water.

B. has examined over one thousand applicants for the aviation service. The turning reactions alone are tested, as the only object is to determine the integrity of the labyrinth and its tracts. By demonstrating an actively normal organ of equilibrium in every prospective aviator, the government will prevent otherwise unavoidable costly accidents in the air.

HOMŒOPATHIC PERIODICAL LITERATURE

Pacific Coast Journal of Homœopathy. November, 1917

1. *Tuberculosis — phosphorus — the opsonic index.* 511. Hawkes, W. J.

"In treatment and care of the tuberculous, all measures are doomed to failure if the *sine qua non* — direct sunlight and fresh air — be disregarded. Place on one hand sunlight, fresh air and correct hygienic living, and on the other hand all other measures of cure, and I would unhesitatingly choose the former, if obliged to choose between them."

"One of the greatest mistakes made in feeding the sick (and the well also) is founded on the grossly erroneous belief that "food" is "nourishment," whereas, food at times is not only *not* nourishment, but a source of weakness! A stomach full of "food" which it cannot digest is not full of nourishment, . . . but it is . . . a cause of sickness and consequent weakness."

"Hence, . . . let us see to it that our tuberculous, or any other, patient is hungry before each meal."

"*Phosphorus* . . . is the most often indicated and most valuable remedy in treatment of diseases of the respiratory apparatus. Whether the case be one of tuberculosis, pneumonia or bronchitis, phosphorus is always the remedy to be first thought of."

"In tuberculosis, phosphorus seems to be more useful in the earlier stages of the disease, although it is useful in all stages. It is a remedy that should not be given in too low a potency, nor too often repeated."

2. *Epilepsy and exophoria*. 517. Kellogg, F. B.

K. reports a case of epilepsy cured after operative correction of a 14 degree divergent strabismus.

3. *A neglected element in the attempt to establish a rational therapeutics*. 520. Meacham, S. F.

4. *The "how" of similia similibus curentur. Its action a physiological law*. 526. Fullmer, B. L.

5. *Pathology as an aid to diagnosis*. 530. Anderson, A. H.

6. *The nosodes of Hahnemann and their relation to modern serums and vaccins*. 533. Cowperthwaite, A. C.

May, 1917

7. *Infection and immunity*. 226. Buffum, J. H.

The North American Journal of Homœopathy. November, 1917

8. *A report of cases diagnosed by the bio-dynamo-chromatic method of Dr. George Starr White*. 593. Plank, T. H.

9. *Bloodless surgery in chronic diseases*. 596. Roemer, J. F.

10. *Physician, heal thyself*. 598. Bush, J. W.

11. *The treatment of external cancer*. 602. Patterson, R. A.

12. *Bio-dynamo-chromatic diagnosis and therapy*. 605. Joslin, O. W.

13. *Diagnosing and prescribing by a new method*. 608. Enos, J. W.

14. *High blood pressure. Case report*. 612. Ireland, D. V.

15. *Surgical treatment of the insane*. 613. Parker, J. W.

The Hahnemannian Monthly. October, 1917

16. *The internist and pathologist*. 577. Leopold, R. S.

17. *The value and interpretation of laboratory findings in hæmatology*. 581. Wurtz, J. G.

18. *Old age and its treatment*. 587. Kinney, C. S.

"The practice of certain insurance companies of having their risks examined at intervals in order to detect any condition of living that may be of injury to the policy holder, is a most valuable one, and should be generally pursued by all physicians in the oversight of their regular patrons."

"Patients suffering from kidney difficulty should do well on rice, as it forms less uric acid and less salt than any other grain or vegetable."

K. makes the remarkable statement that he believes whiskey to be "absolutely homœopathic" when used in treating the aged, but he does not give reasons for this belief.

19. *The one-thousandth potency*. 594. Williams, H. O.

20. *Application of homœopathic therapeutics.* 600. Books, B. F.
21. *Two abdominal operations with pregnancy.* 609. Heimbach, J. M.
22. *Enlargement of the thymus gland in infancy.* 612. Raue, C. S.
23. *Child conservation.* 616. Hassler, M.
24. *Progressive homœopathy.* 619. Askenstedt, F. C.

Iowa Homœopathic Journal. February, 1917

1. *Homœopathy.* 13. Gilchrist, J.
2. *Eczema, a case.* 31. Report of a case cured by graphites 200x.

April, 1917

3. *Tonsils.* 9. Copeland, R. S.

The writer advocates operations for enlarged adenoids but warns against indiscriminate tonsillectomy with enlarged tonsils as the sole indication.

4. *Mental derangement as related to physical disorder.* 16. Sawyer, C. E.

The author makes the rather startling statement that "ninety per cent. of all mental derangement is due to some physical cause." Among the causes (?) given are indicanuria, faulty elimination, cardiac decompensation, pyorrhœa, sinus infection, and gonorrhœa. The importance of the Wassermann reaction in the detection of luetic psychoses is pointed out. The chief value of the paper lies in emphasizing the importance of a careful physical examination in all cases of mental disease. It may be questioned, however, whether in his zeal Dr. Sawyer has not overestimated the significance of certain incidental signs and symptoms.

September, 1917

5. *Exophthalmic goitre.* 9. Paul, I. N.

Stress is laid on the hypothesis that exophthalmic goitre is a trophoneurosis rather than a disease of the thyroid gland, a view for which there is at least some ground. The accuracy of the statement that "organic cardiac disease is always absent" may be doubted.

6. *Gonorrhœa in gynæcology.* 15. Cogswell, W.
7. *Pernicious anæmia.* 19. Brown, E. C.
8. *Diseases of the colon and their ætiological relation to other diseases of the body.* 27. Ireland, D. V.

We are told that "it has been established beyond dispute that 95 per cent. of human ills result from imperfect elimination of the body waste." Further comment is, perhaps, unnecessary.

November, 1917

9. *A coming social problem.* 9. Linn, A. M.

A brief discussion of birth-control.

10. *Value of birth-registration.* 12. Cogswell, J. W.

11. *Surgery of the kidney.* 18. Holloway, C. E.

Urethral catheterization and an x -ray examination are procedures which should never be neglected, and the phthalein test of function is advisable. Before removing a kidney, one must be certain that the opposite one is functioning satisfactorily.

British Homœopathic Journal. October, 1917

12. *Effect of infinitesimal doses in relation to metabolic action.*

278. Bowman, F. H.

A rather lengthy consideration of the ionic theory, with especial reference to the important part played by electrolytes and colloids in metabolism. In speaking of homœopathic dilutions, the author says: "... in these solutions the materials used exist only as ions, and therefore can enter at once into the living cells and take part in the metabolic reaction. This forms the scientific basis upon which homœopathic practice rests."

13. *Notes of a case of Cæsarean section.* 293. Neatby.

The operation was performed in an eclamptic of 35 years. Results were satisfactory.

The Polycrest. October, 1917

14. *The gall bladder.* 9. Burrett, C. A.

15. *The pre-diabetic state — diagnosis and treatment.* 13. Mitchell, C.

Certain persons under ordinary conditions seldom or never excrete sugar, yet develop glycosuria after an unusually large ingestion of carbohydrates. Such persons may subsequently develop typical diabetes mellitus. The best time to search for sugar in the urine is two hours after a meal.

Clinique. October, 1917

16. *Tobacco and blood pressure.* 442. (ed.).

Thompson and Sheldon have shown that the effects of smoking are varied in different patients; in some persons the blood pressure rises, in others it falls. This holds true whether cigars or cigarettes are the form of tobacco employed. "It would appear that when a man has a constantly high blood pressure the use of tobacco is inadvisable, but otherwise we fail to see that any serious objection has been brought forward to its moderate use by healthy individuals."

17. *A growing dearth of doctors.* 448. Stevenson, H. M.

Homœopathic Recorder. October, 1917

18. *Our choice.* 435. Bergman, N.

Report of several cases which showed improvement under the indicated remedy.

19. *Why give medicine?* 447. Dienst, G. E.

A strong argument against the alternation and combination of remedies.

20. *Something else again.* 460. Jones, E. G.

The usual rambling remarks. This time we are told: "There are a large number of doctors in our country and across the broad Atlantic who owe their success in practice to my teaching and writings." — *Paracelsus redivivus!*

November, 1917

21. *Treatment of pneumonia.* 487. Gross, W. L.

22. *Tuberculosis. Fish poisoning.* 490. Stefanski, J. A.

Report of cases.

23. *Prescribing for the baby.* 492. Peterman, J. H.

24. *Sleep and some of its disorders.* 498. Gaston, J.

A review of the causes and treatment of insomnia.

25. *Notes by the way.* 514. Jones, E. G.

W. O.

BOOK REVIEWS

Diseases of the Spleen and Their Remedies. Clinically Illustrated. J. Compton Burnett, M.D. Boericke and Tafel. 1917.

An 80 page treatise devoted chiefly to a recital of cases. *Ceanothus americanus* is the drug which receives the most attention, the main indications for its use being splenic enlargement and pain in the left side. There is practically no discussion of the pathology of the spleen and very little space is given to a consideration of the pathogenesis of the drugs recommended.

The book is of some historical interest but suffers in comparison with some of the volumes recently issued by its publishers.

The Eye, Ear, Nose and Throat. Edited by C. A. Wood, C.M., M.D., D.C.L.; A. H. Andrews, M.D.; G. E. Shambaugh, M.D. The Practical Medicine Series. Under the general editorial charge of Charles L. Mix, A.M., M.D., Vol. iii. Series 1917. The Year-Book Publishers, Chicago.

This volume of 372 pages is in no way a text-book for the specialists to deal with, but it is an admirable résumé of the principal literature and progress in these lines of medical science and art for the past year. The editors have given particular importance to pathological conditions of the eye, ear, nose and throat which are directly brought about by military operations, as for instance, a discussion of the prognosis of "war-deafness" or labyrinthine shock. The volume is an excellent reference handbook.

Impotence and Sterility and Sex-Gland Implantation. By G. Frank Lydston M.D., D.C.L.; formerly Professor of the Surgical Diseases of the Genito-Urinary Organs and Syphilology in the Medical Department of the State University of Illinois. The Riverton Press, Chicago, 1917; 333 pages; sold by subscription only; price \$4.00.

This book, in its first chapters, is similar to the one by Hühner, reviewed in the November issue of the GAZETTE. In addition, one hundred pages are devoted to sex gland implantation, its general aspects, experimental history, technic and

results. According to L., "Certain chronic infections, notably tuberculosis, serious anæmia, neurasthenia, and conditions of profound debility should be benefited by implantation. In brief, any chronic disease in which improvement of nutrition is a desideratum should be benefited by sex gland implantation."

The American Year-Book of Anæsthesia and Analgesia. Edited by F. H. McMechan, A.M., M.D. Volume I. Surgery Publishing Co. New York, 1915.

The *raison d'être* of this publication is best set forth in the editorial foreword: "While The Quarterly Supplement of Anæsthesia and Analgesia of the American Journal of Surgery has provided a journalistic medium for the publication of the *Transactions* of various associations of anæsthetists, it does not lend itself to the collation of the world's ultrascientific researches in these subjects.

"Consequently The American Year-Book of Anæsthesia and Analgesia has been established for this very purpose, and eminent surgeons, dentists, anæsthetists and research-workers have collaborated in presenting, herewith, the current advances in the science of practice of anæsthesia and analgesia."

As the name implies, one volume is to appear each year, and it would seem that progressive surgeons, dentists and research workers should find much of value therein, and that to specialists in anæsthesia it is indispensable.

Pathogenic Microorganisms.—A practical manual for students, physicians and health officers. W. H. Park, M.D., A. W. Williams, M.D., assisted by Charles Krumwiede, Jr., M.D. Sixth edition. Pp. 709. \$4.75. Lea & Febiger, New York, 1917.

A detailed review of this standard and universally popular bacteriologic text-book would be but a series of sincerely commendatory statements regarding the excellent presentations of each of the many subjects that are taken up. The splendid background of the authors in both research and the practical application of bacteriologic knowledge lends to their work an authenticity that is approached in few other text-books on any subject. Particularly is this exemplified in the chapter on diphtheria. Through the extended investigations of Park and his able assistants have come notable contributions to our knowledge of this disease; earlier studies helped materially to lower the mortality; the later researches on the endermic toxin test, together with active immunization with toxin-antitoxin, give trustworthy promise of a sharp fall in the now stationary morbidity rate.

On scarcely a page does one fail to discern evidence of the authors' active and intimate association with the daily problems of microbiology. Cultivation of microorganisms and their identification, epidemiology, pathogenicity, immunologic diagnosis and therapy, food bacteriology, the protozoa, and disinfection all receive masterly treatment. The arrangement is good, the technical instructions lucid and concise, the illustrations illustrate and the important literature is cited.

This book should be possessed by every physician, laboratory worker and medical student.

S. B. H.

Organic Chemistry—including certain portions of physical chemistry; for medical, pharmaceutical and biological students; with practical exercises. Howard D. Haskins, A.B., M.D., Professor of Biochemistry, Medical Department, University of Oregon. Third edition. Pp. 472. John Wiley and Sons, Inc., New York, 1917.

The purpose of this book is to assemble the essential facts of organic and physical chemistry which bear more or less directly on medicine, and to present them in such form and arrangement as will best serve the needs of students of medical science; despite the difficulties of selecting and rejecting the pertinent facts and the non-essentials, this purpose has been achieved most commendably.

In treating of the multifarious groups of classified organic bodies, there is selected—as a nucleus around which the discussion is developed—some substance that has important relevancy to medical and biological science. This plan of presentation makes it much easier for the student to acquire and retain a practical knowledge of orderly chemical relationship and be-

havior than is possible through the medium of "assigned reading" in text-books of general organic and physical chemistry.

The organic compounds are taken up under twenty-eight headings and the laboratory exercises incorporated in the text are so arranged as to extend throughout a school year. Structural formulæ are prominently featured, and their importance in enabling the student to get a firm grasp of the principles and results of group substitution is emphasized.

The book is heartily recommended as an excellent manual for the use of students of medical biochemistry.

Experimental Pharmacology. — Dennis E. Jackson, Ph.D., M.D. Associate Professor of Pharmacology, Washington University Medical School, St. Louis. Pp. 536. C. V. Mosby Co., St. Louis, 1917.

The time is now fortunately past when "clinical" observations as to drug action, based on uncritical guesses and assertions copied from one text book into the next, are to be taken as *knowledge*. Pharmacology as a medical science is of recent growth; formerly taught didactically with an occasional "demonstration," it has established its present firm footing through use of the experimental method. Thus it is a logical development of the pedagogics of pharmacology to incorporate this method in the curricula of medical schools. The student not only obtains a vastly greater store of information regarding the subject itself, but by learning and practising such basic essentials as *foresight* in planning experiments, careful and detailed *observation* and *recording*, the imposition of rigorous *controls*, and the delimitation of his *interpretations* in accordance with observed facts, he is training himself to follow the principles of the scientific method which will help him tremendously in his future practice, and will justify the physicians' being called the great experimenter.

In his preface Jackson remarks the large number of manuals devoted to chemistry, physics, zoölogy, *etc.*, and pertinently asks if the scope and character of work in pharmacology have not suffered from lack of similar laboratory manuals. There is no doubt that teaching is facilitated and becomes more effective if accompanied by concise directions and exactly described laboratory material and apparatus. This manual of experimental pharmacology is a most welcome addition to the meagre list of books on the subject. It has the authority of a master of technic who has devoted years to extensive personal experimentation. It is thoughtfully arranged with regard to availability and economy of material, importance of drugs studied, students' and instructors' limitations, and is copiously supplied with three hundred ninety unique and excellent illustrations, including twenty-four full-page color plates. Directions, concise yet comprehensive, for experiments with drugs are given in Part I, which occupies one hundred sixty-eight chapters. Part II contains about fifty pages devoted to shop work, apparatus, manufacture and photography, and is replete with valuable suggestions and devices. A very useful list of dealers in laboratory supplies is appended.

The book fulfils the high expectations held of the author, and does credit to the publishers. In scope it is rather beyond the facilities and teaching personnel of the majority of medical schools, but it offers a standard of excellence to which all should aspire.

S. B. H.

Asthma. — Presenting an exposition of the non-passive expiration theory. By Harry Orville Brown, A.B., M.D., Ph.D. Formerly Assistant Professor of Medicine, St. Louis University. With a foreword by George Dock, Sc.D., M.D., Professor of Medicine, Washington University School of Medicine, St. Louis. Pp. 330. Thirty-six engravings. C. V. Mosby Co., St. Louis, 1917.

This dialectic monograph is the culmination of nine years' study of asthma. It shows considerable clinical study of the disease, and an extraordinary industry in reviewing literature; there are over a thousand entries in the bibliography. A large number of observed and theoretic data are brought into relation with the author's non-passive expiration theory as opposed to the older theories of bronchiolar muscle spasm, vasomotor disturbance, *etc.*,

but it would seem that the not inconsiderable evidence which does not harmonize with the theory has not received the frank and detailed discussion that it merits. The theory is attractive and the argumentative method of presentation adds rather than detracts from the interest of that section of the book devoted to it, but fails to remove a number of justifiable doubts regarding its correctness.

The foreword by Dr. Dock gives a concise expression of the nature of the book as a whole, and is herewith reprinted.

"With the great range of special investigation in all departments of medicine, and the effort to explain all obscure features by applying new discoveries in every field of science, comes the need of making broad surveys — of gathering in a connected form the present status of various clinical problems.

"The conditions included in the term "asthma" might well excite efforts at general study, and Dr. O. H. Brown has earned the gratitude of the profession by presenting a comprehensive and up-to-date study of them. The writer has had the privilege of following Dr. Brown's research over some years, and of reading his manuscript, and has been impressed by the accuracy of the author's clinical work, and by the fullness and symmetry of the literary production. The literature, both monographic and special, is well presented, the theories of the disease are clearly set forth and critically discussed. The author's theory of asthma, named by him the "Nonpassive Expiration Theory," is stated clearly and in an admirable spirit. It would be superfluous to give an analysis of this theory here, since the chapter well repays careful study, and bears directly on the author's method of treatment, which is clearly presented and reveals the well-informed, accurate, and conscientious therapist. The student and the practitioner can find in this book a true picture of the previous speculations and present knowledge of asthma expressed clearly and concisely, a trustworthy guide in the examination and treatment of actual patients and many suggestions for fresh explorations by the bedside and in the laboratory."

SOCIETIES

Homœopathic Medical Society of Western Massachusetts

The regular quarterly meeting of this society was held at Wesson Memorial Hospital, Springfield, Mass., on Wednesday, December 19, 1917.

During the scientific session, in charge of the Bureau of Surgery, J. H. Carmichael, chairman, the following papers were presented:

1. *Accidents.* E. T. Smith, M.D., Springfield.
2. *Septic infections originating in the teeth.* H. C. Cheney, M.D., Palmer.
3. *Early treatment of fractures.* R. F. Hovey, M.D., Springfield.
4. *The necessity of proper diagnosis.* J. H. Carmichael, M.D., Springfield.

Dr. M. W. Conrow of Springfield is president and Dr. E. U. Dillenbach secretary.

OBITUARY

The funeral of Dr. Adelaide Lambert, who was one of the first women to practice medicine in the city of New Haven, was held on Saturday, December 8, at her late residence, 86 Broadway. Rev. Dr. Stewart Means of St. John's Episcopal church officiated. The honorary bearers were Dr. W. P. Lang, Dr. E. C. M. Hall, Dr. Stewart Skiff, Dr. Robert Ferguson, Dr. Nugent, Dr. W. A. Butler, Dr. E. J. Walker and Dr. C. W. Vishno. There were many beautiful floral tributes, silent tokens of esteem and sympathy. Dr. Lambert was born in Sharon, Conn., and graduated from the Boston University College of Medicine in 1884. She then came to this city, where she was well-known in professional circles and where she had a large practice among the women of the city. She is survived by six nieces and two nephews; the youngest nephew is now serving with the colors in France.

The death of Dr. Lambert has removed from active service in the practice of medicine a woman of rare cultivation and tender sensibilities. She was among

the first of her sex to undertake the practice of her profession here, and the story of her useful life is summed up in the high esteem and confidence in which she was held by practitioners and public alike. She met the cynicism of earlier years with perfect good nature, realizing the obstacles that had to be overcome before a woman could find a secure and comfortable place in the profession and determining to overcome them, not more for herself than for the medical profession at large and for the women of the world who demand recognition for the worth they display. Hers was an example that will long be remembered in the city.

EVERY DOCTOR IN THE MEDICAL RESERVE CORPS

What an ideal situation it would be if every doctor in the United States who is mentally, physically and morally fit, were in this Corps!

The time is coming in the immediate future, when the Medical Reserve Corps of the Army must be immensely augmented; and so as to enable the Surgeon General to have at his command for immediate assignment as conditions demand a sufficient number of trained medical officers, let us take the above thought seriously.

We all know from past history the conserving value of an efficient medical corps, and this means number as well as training.

A statement made by one high in authority in the Surgeon General's office, "that our fighting forces would be decimated by sickness and casualties in six months, were it not for an efficient Army Medical Corps," clearly emphasizes the importance of every doctor in the United States meeting the requirements above referred to, accepting a commission in the Medical Reserve Corps of the United States Army.

The struggle in which we are now engaged and for which we are preparing to take such a prominent part depends for its success as much upon the medical profession as it does upon our combatant forces, and while we do not know that any such intention as herein suggested is in the mind of the Surgeon General, it would at least give him the necessary corps of medical officers upon which to draw, and thus serve the best interests of our country and the best interests of the medical officer.

TEN YEARS OF THE FOOD AND DRUGS ACT

Ten years of enforcement of the Food and Drugs Act of June 30, 1906, are reviewed in the current annual report of the Bureau of Chemistry, United States Department of Agriculture, which says that the Act's chief contributions to the safety of the people's health have been its corrective effect upon the drug and patent medicine industry, its control of trade in unclean milk, polluted, decomposed or filthy foods, and protection of foodstuffs from contamination with poisons likely to be met in manufacture.

The general effect of the Food and Drugs Act may best be estimated, says the report, by considering its effect upon food and drug control by the States; upon development of the food and drug industries and by the principal abuses that have been corrected. But to illustrate the scope of the work through figures and facts the report points out that more than 6000 prosecutions have been terminated in the courts in the first decade of the Act; that manufacturers have been cited at hearings more than 40 000 times; that many thousands of factory inspections have been made, and that more than 750 000 shipments of domestic or imported food and drugs have been examined.

Special attention has been given to shipments of polluted or spoiled food. Milk shipped in interstate commerce and imported from Canada has been improved in cleanliness, purity, and the condition of sanitation under which produced. The canning of decomposed navy beans has been largely suppressed. Interstate shipment of oysters from polluted waters has practically ceased. Because of coöperation with State and municipal officials in controlling the shipment of bad eggs, it is reported that the quality of the eggs reaching the large cities is much improved. Other products in whose handling and sale improvement has been noted include mineral water, tomato products, fruit, vinegar and gelatin.

States Cooperate with Federal Laws

One consequence of the enactment of the Food and Drugs Act was to encourage similar legislation in many of the States, the purpose of which is to control local traffic in food and drugs which, since no interstate commerce is involved, are not subject to the Federal law. For example, in 1906, many States had no feeding stuffs laws. A State could not prosecute a manufacturer unless he were a citizen of that State. The Federal law supplements the State law in this respect and now most of the States have similar laws.

In the beginning the confusion and apparent conflict between local and Federal laws and administration of laws not only made it difficult for the two sets of officials to cooperate, but often made it necessary for manufacturers to make special preparations for shipment to certain States at extra cost, the extra cost being passed on to the ultimate consumer. This evil has been remedied to a considerable extent by the organization of two agencies which in a large measure have removed some of the difficulties arising from the conflict of Federal and State jurisdiction. These agencies are (1) The Joint Committee on Definitions and Standards, and (2) The Office of Cooperative State and Federal Food and Drug Control.

Abuses Corrected by Law

The best evidence, according to the report, that many of the abuses formerly occurring in the food industry have ceased is found in the fact that the violations of the Food and Drugs Act observed today are hardly comparable, in degree, with those in the first few years following the enactment of the law.

Most of the staple-food products now found in violation either are of a higher grade than formerly or are products of clever adulterators who have more or less anticipated detection, so that the adulterations have been found only by the most painstaking chemical analyses and factory inspection.

Consequently there has been a decided change in the direction of the work. In recent years it has developed quite noticeably in the direction of factory sanitation; of the study of spoilage and decomposition of foodstuffs and of improvement through laboratory research of methods of detecting the more refined types of adulteration.

PATENT MEDICINE LABELS

Ten years ago there was no ailment to which human flesh is heir that some maker of patent medicines did not claim to be able to cure with such ease that it seemed almost the height of foolishness not to part with the price for his nostrums.

Today, because of the operation of the Federal Food and Drugs Act, the extravagant promises of cure that characterized the labeling of the patent medicines of ten years ago have practically disappeared from the preparations that enter interstate commerce. They may, however, still be found in newspaper and other advertisements that are not subject to the act. The "pure food law," as it is known, is concerned only with the package as it is shipped in interstate commerce. If one questions the truth of a newspaper advertisement of a patent medicine let him read the label on the carton or bottle at the corner drug store. The latter will come nearer telling the truth about the medicine.

Misbrandings, in regard to healing value of hundreds of alleged cancer cures, so-called "cures" for coughs, colds, consumption, kidney diseases, epilepsy, St. Vitus dance, and the like, have been corrected.

The law requires the labels of patent medicines to declare the presence of any habit-forming drug, such as opium, cocaine, or alcohol, thus preventing the innocent development of the drug habit. This provision of the law is particularly valuable in warning mothers against the use of so-called infant soothing syrups containing opium.

When the Act went into effect, drug addiction was so prevalent that frauds in the treatment of the victims were frequent and in most instances the remedy advertised so forcefully by the labels contained the very drug from which escape was desired.

In 1907, the Bureau of Chemistry found that 30 soft drinks contained small amounts of cocaine. Practically all of these were suppressed. The Food and Drugs Act is regarded as having been an important factor in bringing about

passage of the Harrison Anti-Narcotic law, which more effectively controls habit-forming narcotics.

Much has been done, the report says, to control the indiscriminate use of so-called headache remedies containing dangerous, depressing drugs, and of dangerous cosmetics making claim to healing value; and in raising the quality of the supply of crude drugs through the examination of imports. As a result of coöperative work with the Post Office Department, a number of fraud orders were issued by that department preventing the use of the mails in promoting the sale of fraudulent medicines.

COLD-PACK CANNING AND BOTULISM

The United States Department of Agriculture authorizes the following statement:

Botulism, often called sausage poisoning, is a specific intoxication brought about by *Bacillus botulinus*, an organism isolated by Van Ermengen from insufficiently cooked sausages which had caused a severe outbreak of food poisoning in Belgium in 1895. The symptoms (nausea, gastric pains, visual disturbances, muscular weakness, etc.) are caused by a definite toxin or poison produced by the *Bacillus botulinus* outside of the body.

The *Bacillus botulinus* is an anærobic organism — that is, it grows in the absence of air. It grows readily at 20 degrees to 25 degrees C., but only sparingly at 37 degrees C., the temperature of the body, and there is no conclusive evidence that it produces its toxin to any extent in the digestive tract of animals. *Bacillus botulinus* does grow readily and produces its toxin in protein foods such as meat or fish products. Some investigators state that it also produces its toxin readily in protein-containing vegetables like peas, beans, and corn. When growing in these foods, the organism produces a very powerful poison which produces the symptoms mentioned above, or even death, when eaten in extremely small amounts. Fortunately, cases of botulism are not common in this country.

The *Bacillus botulinus* is a spore-forming organism, but both the organism and its spores are not very resistant to heat, the spores being killed by heating to 80 degrees C. for one hour. The toxin which the organism produces is also destroyed by boiling. Thorough cooking at the boiling temperature is therefore all that is necessary to kill the organism and destroy its toxin in the food, and cases of botulism are due to the eating of food which has been infected with the organism and not been sufficiently cooked. Sausages, which might become infected with this organism, present ideal conditions for its growth, and have been a frequent cause of botulism. From this fact the name of the disease is derived. Infected meat products and, in a few instances, canned vegetables and fruits have been given as causes of botulism.

Recently Dr. Dickson of San Francisco has reported¹ a study of eleven outbreaks of food poisoning, occurring during the past eighteen years in California, which he attributes to eating canned vegetables and fruits. In these cases no definite information is available as to the methods used in canning the vegetables, but it is reasonable to assume that the contamination of the goods might have been brought about by the selection of food of poor quality for canning, by lack of cleanliness in packing the products, by the neglect of some essential steps in the process, or by failure of the heat to penetrate to all parts of the can in sterilization.

There is no danger that the type of food poisoning known as "Botulism" will result from eating fruits or vegetables which have been canned by any of the methods recommended by the United States Department of Agriculture, providing that such directions have been followed carefully, and that no canned goods are eaten which show signs of spoilage. In case of any doubt as to whether the contents of a particular can have spoiled it should be thrown away. If fed to chickens or other animals it should be boiled. No canned food of any kind which shows any signs of spoilage should ever be eaten. In the cold-pack method of canning given out by the Department of Agriculture, only fresh vegetables are recommended for canning, and sterilization is accomplished by the following processes: Cleansing, blanching, cold-dipping, packing in clean, hot jars, adding

¹ J.A.M.A., 1917, lxi, 966

boiling water, sealing immediately, and then sterilizing the sealed jars at a minimum temperature of 100 degrees C. for one to four hours, according to the character of the material. Since the spores of *Bacillus botulinus* are killed by heating for one hour at 80 degrees C.¹ there is no reason to believe that the *botulinus* organism will survive such treatment.

Bacillus botulinus has been found in the digestive tracts of some animals, especially the pig and the fowl, probably occurring there in the same manner as does the organism of tetanus (lockjaw) in the intestinal tract of the horse. It is not a parasite in the ordinary sense, but rather a saprophyte. From these sources it may be deposited on the soil, although attempts at isolating it from the soil have generally given negative results.

November 27, 1917.

INDIVIDUAL INCOME TAX RETURNS

At least 350 000 individuals residing in Massachusetts will be required, during the months of January and February, 1918, to make returns of their income for the year 1917 to the Federal Government. Every unmarried person who had an income of \$1 000 or more during the year 1917, and every married individual living with wife or husband who had an income of \$2 000 or more for the year 1917, must make this return on or before March 1, 1918. Inasmuch as the great majority of people required to make this return of income are not thoroughly acquainted with the requirements of the law as passed by Congress on October 3, 1917, the Income Tax Office is planning a campaign of publicity in order that they may become acquainted with the provisions of the law, and in addition plans to have, during the months of January and February, approximately one-hundred Federal Income Tax experts stationed throughout the State in order that they may give advice and make out returns, without any cost to the taxpayer.

The public will be notified later of the dates upon which the income tax men will be in the different towns and cities throughout the State, and should await their coming before attempting to make out their returns. The hours of these men will be so arranged that individuals who are employed throughout the day will be given an opportunity to consult them and make returns out under their supervision.

The Income Tax Office at Boston has been overwhelmed with correspondence incidental to the new war revenue bill of October 3, 1917, since the date of its enactment. It is urgently requested that the public refrain from writing to this office for returns or for interpretations of the law, as correct interpretations of the law will be furnished through the press and by the income tax men, and blank forms upon which the individual taxpayers will make returns will be at convenient points for distribution in the towns and cities of the State in the early part of January.

Taxpayers who have made income tax returns for previous years will, as heretofore, receive their blanks through the mail.

Watch the papers for further information.

THE MENACE IN SUPPURATING EARS

By Ben Clark Gile, M.D.

During recent times medical teachers and writers have shown a marked tendency to substitute specific and exact statements for those which are general and indefinite. In the popular literature of the eighteenth century and the early decades of the nineteenth the reader frequently meets such expressions as: "She had weak lungs"; "In his purpose to prosecute a vigorous campaign, he was greatly hindered by a feebly acting heart." Language like this, which may have conveyed the information desired by the

¹ Rosenau, M. J., Preventive Medicine and Hygiene, New York and London, 1917, 2d ed., 627; Jordan, E. O., A Text-Book of General Bacteriology, Philadelphia and London, 1916, 5th ed., 356; Park, W. H., and Williams, Anna W., Pathogenic Microorganisms, New York and Philadelphia, 1917, 6th ed., 449.

public, was not rare in medical books, where, from our point of view, it seems wholly out of place.

About the middle of the last century there appeared in all branches of science, and especially in medicine, a growing demand for greater particularity and accuracy. It was no longer sufficient to speak of lungs as weak without telling the *how* and *why* of their weakness; it was not enough to assert that the heart's action was feeble; the mode of feebleness and also its cause became necessary particulars in describing the cardiac condition. This may appear to have been chiefly a change in forms of expression, but in truth the verbal alteration was the sign of something much more important; it signified recognition of the fact that adequate knowledge of disease requires study of its details, even those that are minute and inconspicuous, and that a thorough acquaintance with morbid processes is a prerequisite to the formulation of a rational method of treatment.

As otology was a late development of specialization, the ear was deprived of the advantages of accurate study for a long time after they were conferred upon some other organs. For years after toothache had established its claim to be treated by a professional dentist, earache was still relegated to domestic treatment, directed by that "intuitive maternal wisdom" which is a theme for laudation at mothers' conventions. One popular remedy was the juice of a baked onion dropped into the affected ear; another was a plug of lint saturated with laudanum. After such applications to the meatus, the child was laid in the rocking cradle and vigorously shaken, with the hope of putting it to sleep. When the sole cause of the trouble was a slight congestion of the tympanic vessels, the circulation became normal during slumber and, upon waking four or five hours afterward, the pain had disappeared. Domestic treatment had scored a cure.

Often, however, these measures proved ineffectual. When in spite of them the baby continued to be so "cross" that there was no rest for it or its mother, the doctor was called in. If the child was too young to tell in words the location of its pain, the physician was puzzled. The infant's crying proved that it was suffering, but where was the trouble? It might be in the chest, abdomen, or other places as well as the ear. If these were examined without disclosing the cause of the pain, the doctor was in a quandary. Even the child's ability to speak and assert that his ear hurt him did not clear up the perplexity, for the physician without even a modicum of otologic training had neither the skill nor the instruments to properly examine the ears. He could not ascertain the facts and was forced to guess what caused the pain; perhaps it was neuralgic in character; perhaps it was reflected from the undeveloped teeth. Thus harassed by doubt, the doctor suggested that the attack might be due to a sudden cold or to teething, and the immediate need was to relieve the pain; so he prescribed an anodyne and promised to call the next day.

At that time he found the child free from suffering and the mother expressed her relief from anxiety: "Baby is all right now; during the night his ear broke and it is maturing freely this morning. You need not call again. The trouble is over." Yes, the temporary pain, the slight illness, was ended; but suppuration of the middle ear, the serious, dangerous disease, had just begun its course. Experiences such as this were once quite frequent and were the starting points for numerous cases of deafness and for many fatalities. Fortunately we have entered upon an era of more rational and intelligent treatment of affections of the ear.

Today the competent family physician is provided with an aural speculum and a head mirror to reflect light upon the drum-head, and he knows how to use these instruments. In searching for the cause of pain in a suffering child he examines the ear, as well as the other organs, and if he finds the drum-head red, congested, or bulging, he promptly takes the action which the condition requires.

Diseases of the middle ear, so common in childhood, had for a considerable time been recognized as a prolific source of defective hearing; but their influence in shortening life attracted little attention. As death was seldom an immediate result of these affections, as they nearly always terminated in apparent recovery or lapsed into chronicity, their lethal tendency,

manifested as a somewhat remote sequel, was generally overlooked, and indeed there were few opportunities to trace the end results of these maladies and to fix upon them the responsibility for fatal consequences postponed for years and whose etiology was often obscured by the presence of complications. Some investigations were undertaken by examining the mortuary records of metropolitan hospitals. The data furnished by Guy's Hospital, London, showed that aural disease was the cause of death in the proportion of 1 to 158. The General Hospital of Vienna exhibited a ratio of 1 to 232, and that of Copenhagen of 1 to 303. These are very small figures, and had they remained unchallenged we would be justified in classifying otitis among the diseases which rarely menace life; but Dr. O. Körner inaugurated an inquiry covering a much wider scope than the hospital records. Basing his calculations upon the elaborate statistics gathered by the Prussian Government, he reaches the conclusion that of all deaths occurring between the ages of 10 years and 30 years nearly 4 per cent. are caused by disease of the ears.

This statement will occasion surprise to many, both within and without the medical profession; but I am confident that it is a close approximation to the truth. Körner's conclusions have been indorsed by Professor Bezold, the distinguished otologist of Munich, and by other high authorities—men whose scientific standing and unquestioned veracity command our assent to this statement of high mortality, although it is a wide departure from the opinion formerly prevalent.

The ratio of ear-caused fatalities drops very rapidly after the thirtieth year, rendering it very plain that these early deaths are not due to those disorders of the labyrinth associated with maturity, but to the forms of otitis extremely common in childhood; and in view of the astonishing statements made above, it is doubly important to consider whence these diseases originate and how they become dangerous to hearing and perilous to life.

A very prominent, perhaps the most prominent, source of these inflammations is the group of infectious fevers often called the exanthemata. Children are so susceptible to these that they bear the name "diseases of childhood." Nearly all of them are prone to injure the ear, though some do far more harm than others. As they weigh heavily against the aural soundness, as well as the general health, of each rising generation, it means a great deal to throw the proverbial "ounce of prevention" into the counterbalance. Our first effort in this direction is to destroy the pathogenic power of the exanthemata, so that children will not only recover more or less fully from its effects, but—far better—remain free from its influence. This warfare, which aims at the extermination of diseases, has such vast possibilities that it has inspired men with hope and enthusiasm unparalleled in the history of medical research. Great victories have already been gained; smallpox has been almost eliminated; diphtheria has been shorn of its terrors, and typhoid fever is now only the shadow of a malady once the object of universal dread. Without extravagant optimism, we may anticipate the introduction of serums or bacterins which will subjugate measles, influenza, and that arch enemy of hearing, scarlet fever.

In addition to the forms of otitis associated with the infective fevers, there are others of independent origin and termed idiopathic. They are primarily affections of the ear and do not at the start impair the general health. When an attack of this sort is threatened, prophylaxis is of the highest value, and indeed it can be said that a majority of these cases can be cut short at their inception by the use of judicious preventive measures. Among these measures is such protection of the external ear as common sense dictates. The auricle must be kept clean and it must not be cuffed, jerked or twisted—a method of inflicting punishment formerly in vogue among ill-tempered parents and donderheaded schoolmasters. The lobe must not be pierced for the suspension of ornaments and foreign bodies, or plugs of hardened ear-wax must not be allowed to remain in the meatus, but should be removed by the physician. Perhaps most important of all is the prompt and thorough treatment of the nose and throat disorders, which are responsible for a very large proportion of diseases of the middle ear, especially in childhood.

By such efforts as those mentioned, the prevalence of fully developed

otitis media can be much lessened and the number of cases attended by persistent suppuration reduced to a minimum; but there will remain a residuum in which, either by neglect of preventive measures or by their failure, the disease has gained a firm hold and has brought about morbid changes of an extended and serious character.

A clinical picture of inflammation of the middle ear at this advanced stage shows congestion and thickening of the walls of the tympanum, impaired motility of the three ossicles, partial obstruction of the Eustachian tube, and more or less engorgement of the blood-vessels throughout the aural region. These anatomical changes are accompanied by impairment of hearing variable in degree and experienced as a muffling of sound caused by inability of the conducting mechanism to efficiently transmit vibrations. In unilateral cases the surdity is, of course, much less noticeable because the normal ear maintains functional activity. Severe pain is not common; but there is a continuous sense of discomfort, with the addition of tinnitus in some one of its numerous forms. It has been remarked that in the otitis of childhood tinnitus is less troublesome than we would expect from the extent of the morbid changes. This mitigation is rather apparent than real and is due to a curious peculiarity of children. Although they are specially sensitive to acute pain, yet diseases and disabilities which have become chronic are endured by them more uncomplainingly than by their elders and often judicious questioning is necessary to elicit experiences which are related in detail by older persons whenever they can find a listener.

It remains to consider one more symptom which is very prominent and characteristic — the suppuration. This feature is incorporated in both the medical and the popular name of the affection; for we designate the disease as suppurative otitis media and the people describe it as running at the ears. As in other localities, so here, the discharge of pus signifies an advanced stage of the inflammatory process, and the anatomical peculiarities of the ear give rise to many aggravations. The pus (barring complications) emanates from the membranes lining the inside of the tympanum and escapes through one or more perforations of the drum-head into the external meatus. Its quantity is subject to wide variations, ranging from a drop or two hourly to an amount so large as to excite astonishment that the limited intratympanic surface can secrete such a quantity. In exceptional cases the outflow is so profuse that, after all accumulations have been washed away and the ear rendered clean, there is only a brief interval until the meatus has been refilled and the liquid overflowing the concha runs over the lobe and drops upon the child's neck and shoulder.

The situation described is bad enough in the case of children who have nurses or attendants who do all that is possible to mitigate it, but unspeakably worse for those who are ill-used and neglected. The pus fills up the furrows within and behind the auricle and spreads over the cheek and neck; some of it dries into crusts, beneath which there is a semi-fluid mass; in this the hairs become entangled, forming a putrefying pad which may cover much of that side of the head. Upon this insects deposit their eggs, soon developing into maggots, which scatter in all directions, and the child's condition becomes indescribable. One does not wish to dwell upon this repulsive subject; but we should all recognize the truth as an incentive to do our best to check otitis before it reaches the stage of suppuration, and, when cases come under our care which have already passed this point, to employ those vigorous measures of treatment which the distressing situation demands.

It has been said above that both hearing and life are frequently imperiled by otitis. With respect to the first, the danger arises from the disorganization of the aural-conducting mechanism consequent upon prolonged inflammation, leading to degeneration and necrosis. This same cause sometimes proves fatal, the persistency of the morbid action undermining the child's vitality and terminating in sepsis or marasmus. Death is, however, much more frequently the result of some secondary disease, and this circumstance misled professional opinion as to the part played by disorders of the middle ear prior to the statistical inquiry made by Dr. Körner. The onset of the secondary disease is often postponed for a long time after the start of the affection of the ear, but the causal connection is undoubted.

A common extension of middle-ear disease is to the cells of the temporal bone, producing mastoiditis and kindred disorders, all of which are of serious character. Even more dangerous is the penetration of the internal ear and involvement of the intracranial structures. The prognosis of the diseases thus engendered is very grave, and not many years ago they were regarded as necessarily fatal. Aseptic surgery has succeeded in saving a number of lives, but the mortality remains extremely high. The intracranial lesions traceable to previous disease of the middle ear include thrombus of the sigmoid sinus, extradural abscess, meningitis, and abscess of the brain, either cerebral or cerebellar.

Children with pus escaping from the meatus may endanger their school-mates and playfellows, not because pus corpuscles coming in contact with healthy tissues will cause disease, for of this there is no proof, but because the discharge often carries pathogenic germs of various kinds which are capable of infecting normal membranes of the ear, nose, or throat. As a precautionary measure, pupils with suppurative otitis should not attend school unless the purulent secretion is so slight that it can be fully controlled by plugs of absorbent cotton worn in the meatus during school hours and renewed each morning. *The Volta Review*, Oct. 1916.

PERSONAL AND GENERAL ITEMS

Dr. W. G. Kinsley, B.U.S.M., '14, has been transferred to Camp Sevier, Greenville, North Carolina.

Dr. J. H. Lambert, B.U.S.M., '99, is with Base Hospital No. 7 (Boston City Hospital), which was recently ordered to mobilize.

Maj. William F. Wesselhoeft and Lieut. William F. Wood were transferred from University of Pennsylvania to Base Hospital at Camp Devens, Ayer, Mass.

Maj. Thomas E. Chandler, B.U.S.M., '00, and Lieut. Milo C. Green, B.U.S.M., '16, have returned to Boston from Rockefeller Institute, where they were ordered to report for special instruction.

Dr. E. U. Dillenback, B.U.S.M., '14, was ordered to report and is now at Camp Greenleaf, M.O.T.C.

Dr. H. G. Hubbard, B.U.S.M., '08, has been appointed to the staff of the Rutland State Sanatorium and will assume his duties on Jan. 1, 1918.

Dr. Marguerite Everham, a graduate of Hahnemann Medical College of Chicago, has finished a year's internship at the Massachusetts Homœopathic Hospital and is prepared for the missionary field in China. She expects to sail for China in March or April of 1918 and to go at once to Swatow.

Dr. Robert I. Walker of New Bedford, Mass., B.U.S.M., '14, has been appointed as intern in the Massachusetts Homœopathic Hospital, succeeding Dr. Eleanor M. Anderson, who resigned from service on December first.

Dr. Eleanor M. Anderson, class of 1916, B.U.S.M., is to be married on January first at her home "Milbank," Greenwich, Connecticut, to Mr. Frederick B. Campbell of New York. They will spend the months of January and February in California and on their return will reside in New York City, where Mr. Campbell is engaged in the practice of law.

Dr. David O. N. Lindberg, B.U.S.M., '15 and Dr. Cosa D. Haskell, B.U.S.M., '13, were married in October. Both were on the staff of Fergus Falls, Minnesota State Hospital at the time but have since resigned, Dr. Lindberg to serve as surgeon to the 19th Aero Squad, American Expeditionary Forces. Dr. Haskell-Lindberg has been visiting in the East but will return for the present, at least, to her home in Ord, Nebraska.

Dr. Anna R. Manittoff, B.U.S.M., '15, has been appointed to the staff of Fergus Falls State Hospital, succeeding Dr. Haskell-Lindberg.

Dr. Maurice Worcester Turner, formerly at 127 Harvard Street, has removed to 786-788 Washington Street, corner of Downing Road. Hours: 8-9; 3-5. Sundays and Holidays by Appointment. Telephone, Brookline 43.

Dr. Everett Jones, B.U.S.M., '98, has secured a substantial donation for the Massachusetts Homœopathic Hospital. The income derived therefrom is to be used for general hospital purposes until the time when a new building to house the children's department may be added to the hospital group; then the fund is to be used in connection with this department. An extension of the hospital's facilities in this direction is now one of the most urgent needs of the institution.

Dr. Everett W. Coates, B.U.S.M., '12, is now located at 5 South State Street, Concord, N. H.

Dr. J. H. Darling, for many years in practice at Thompsonville, Conn., died there on October 18.

Dr. H. L. Williams, of Auburn, Maine, has received a commission as Lieut. M.R.C. Dr. Williams is a graduate of Hahnemann Medical College, Chicago.

Dr. Raymond E. Senecal, of New Bedford, has received a commission as Lieut. M.R.C., and expects to take up his duties in January.

Dr. George H. Talbot, B.U.S.M., '82, handsomely helped the Newtonville, Mass., branch of the American Red Cross, when the association needed centrally located headquarters. With the exception of his office rooms, Dr. Talbot generously donated the use of his Walnut Street home, and with his family, took up his residence elsewhere in town for the period of the war.

Dr. Edna Wallace B.U.S.M., '15, is engaged in missionary work in China. She writes from Canton.

Dr. Hideyo Noguchi of the Rockefeller Institute is reported to have been operated upon for appendicitis.

Capt. Robert F. Souther, recently transferred to Boston for duty with the aviation section, has been ordered to Camp Mills, Garden City, Long Island, N. Y.

One of the buildings of the Boston City Hospital has been set apart to serve as a pertussis hospital; this is probably the first whooping cough hospital in the United States.

Long Island in Boston Harbor is to be purchased by the U. S. Government for hospital purposes. The sum of \$1 300 000 paid to the city is to be used for building cottages for the sick and poor now on the island.

The Municipal Council of Haverhill has appropriated \$70 000 for the erection and equipment of a two-story brick addition to the Glen Gale Hospital of the city, increasing the hospital's capacity from fifty to one hundred beds. A general medical dispensary and out-patient department is also to be established.

Mrs. Lillian G. Knowles has severed her connections with *THE NEW ENGLAND MEDICAL GAZETTE* to accept appointment in Government service. She has been assigned to the service of Col. F. F. Russell of the Surgeon General's Office in Washington. Her new home address is 1824 G Street, N. W., Washington, D. C.

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ORIGINAL COMMUNICATIONS

TUBERCULOSIS AND THE GREAT WAR*

HERBERT C. CLAPP, M.D., Boston

What is the influence of such a war as this, so different from other wars, on the development of tuberculosis in soldiers previously free from it, on the revival of the trouble in those who had apparently recovered from it, and on the aggravation or otherwise of the symptoms in those who joined the army with the disease in a more or less active state?

Should this war continue for several years longer (and may God forbid), we might acquire ample statistics for the more exact solution of this problem. As it is, there is not a perfect unanimity on the subject. The great majority of physicians evidently thinks that the life of a modern soldier in Europe is eminently favorable for the development or aggravation of tuberculosis, on account of the many hardships he is called on to endure. These include often intense or long-continued over-exertion, exposure in the trenches, standing knee-deep in the mud, being thoroughly wet for hours and chilled through, the want of sleep, fear and mental strain, eating at irregular times, inhaling poisonous gases, being depressed by homesickness and by lack of home comforts, or discouraged by defeat now and then and debilitated by more or less dissipation. The majority of physicians so far apparently has the statistical evidence, such as it is, to support its belief. In the trenches also the opportunities for contagion are good, if some there have the disease, as it is so hard under the circumstances to dispose properly of the sputum.

On the other hand, some medical authorities claim that a soldier's career tends to strengthen bodily resistance to tuberculosis by reason of the life in the open air, the discipline, regu-

* Read before the Hughes Medical Club, December, 1917

lar habits, simple food, etc. The great English medical weekly, the London *Lancet* of Feb. 17, 1917, in an editorial says that "Camp and trench life have not produced more breakdowns than would have occurred in civil life. . . . It is amazing that there have not been more breakdowns in an army of so many millions." And Sir William Osler, in the *Lancet* of Aug. 5, 1916, expresses practically the same views.

Those of us who have had much experience in the treatment of tuberculosis in civil life can easily appreciate the force of both of the above arguments. If it is true that in spite of the great hardships which modern soldiers are called on to endure, the proportion of men suffering from tuberculosis is no greater in military than in civil life, it must be because the soldiers are a selected class, since from the military forces by medical entrance examinations, however imperfect, a certain amount of tuberculosis had been eliminated, sufficient to balance the excess of unfavorable influences resulting from the difference between military and civil life. But, as the war goes on, further evidence seems to accumulate, judging from the later experiences reported in the medical journals that, independently of this elimination, a soldier's life really does have a more disastrous effect on the firing-up of tuberculous processes than an average civilian's life.

The practical application of this experiential evidence is that most of the nations at war, wherever it is possible to do so, and unless their shortage of men is tremendous, have within a year or more gradually increased the rigidity of their entrance examinations to the point where now some think they are altogether too rigid: Namely, not only are those with active tuberculosis excluded, but also even all those who have ever had the disease (at least to an extent beyond its very incipency), and have been apparently cured of it, for fear that the hardships of war would redevelop it. And this, in spite of the fact that many cured cases have held the fort splendidly.

Of course the basis of this decision rests not only on the experiences derived from the early years of the war, but also on the results of sanatorium treatment of the disease in peace. In America the first sanatorium for the attempted cure of tuberculosis supported at the public expense was the large State Sanatorium at Rutland, Mass., which is now in its 20th year of existence, having been preceded on this continent only by perhaps two or three small private institutions of the kind. Sanatoria for the same purpose had been established many years earlier in Germany, where they originated. We are forced to concede so much to our enemy. The results of treatment in all these and in a multitude of others which have since sprung up

all over the world have, in contrast to previous efforts, been truly marvellous, and yet they have left much to be desired. Far-advanced cases of the disease have not been decidedly more amenable to treatment in them than they were before. In other words, all but a small percentage of this class have died. In moderately advanced cases failures have been far more frequent than apparent cures. The latter have chiefly resulted in patients of the incipient class, in which a large percentage of apparent cures or arrests has resulted, if the patients were faithful to the treatment. But even in this class, of those who were discharged as apparently cured or arrested, a certain proportion has always been found to backslide after a longer or shorter time, the proportion varying largely with the departures from the prescribed correct methods of living; these departures being sometimes voluntary, but often beyond the patient's control. Occasionally recoveries have been permanent even in spite of apparent violation of well-known hygienic laws, showing a remarkable toughness of constitution; but as a rule such violators have only proved the truth of the old statement that "the way of the transgressor is hard." Some seem to make so perfect a recovery, as to be and remain practically as well and strong as the average man. Nevertheless, experienced phthisiologists the world over always feel a little shaky about the future of any one who has ever had the disease, no matter how well he seems to be, unless he keeps constant watch over himself and is watched by others. They feel easier in mind if he is not obliged to be subjected to too much stress and strain. That is the reason that many physicians now in most of the countries at war have decided that it is the wisest plan to rule out all tuberculosis, past as well as present, and to take no chances; because no physician can guarantee that one man will have sufficient resisting power to bear the depressing influences of military life, and that another man will not, even if most of them could get along with care in civil life perfectly well. Any old arrested focus may remain circumscribed and dormant as long as the resisting forces of the organism are able to oppose an adequate defence; but if these resisting powers are weakened by any cause, the torch is applied and the smoldering fire blazes up.

Therefore, no such man should be allowed to join the army in the first place, and if he is already in the army, he should be eliminated from the ranks as soon as he shows the first signs of active trouble. The expense to the Government of enlisting, equipping, training, transporting, supporting, treating and pensioning consumptives is perfectly enormous, and should be avoided as much as possible, as well as the danger of contagion.

And on the other hand, from the soldier's point of view, how much better his chances as a rule would have been had he remained in civil life. Perhaps this may be stating the question a little too strongly. As Dr. Bushnell points out, some examiners in making an effort to act on this principle, carry it to an extreme, and cause the government to lose men whom it cannot afford to lose, and thus greatly impair the efficiency of the army. So, while active cases and old lesions of some degree of magnitude, even though inactive, should be excluded, he says, yet if a man comes along in apparent good health and vigorous physical condition, even though he presents evidences of having once had a little trouble, he has the right to serve his country and the country has the right to demand his services; and if later he breaks down, he has a right to his pension. If we exclude too many, we have no army. We must give the Government a little of the benefit of the doubt.

The United States, coming into the war at a late day, naturally feels as if it should take advantage of the experiences previously gained by the allies. Consequently our Government has applied to the influential and now powerful, but non-military, National Association for the Study and Prevention of Tuberculosis, the recognized authority in the present antituberculosis campaign in this country, to suggest the names of physicians who are tuberculosis experts in different parts of the United States, who might be called on to serve as Volunteer Examiners in this line, and to go through the ranks as with a fine-tooth comb, and weed out such cases as might have been allowed to slip through by the regular army surgeons in their more or less hasty preliminary examinations, and to do this before sufficient time has elapsed to make it seem likely that the trouble has started after enlistment or draft and thus entitle to a pension.

Surgeon-General Gorgas has established a department or bureau of tuberculosis in charge of Col. George M. Bushnell, who for years has been at the head of the U. S. Army Tuberculosis Sanatorium at Fort Bayard, New Mexico, and Dr. Bushnell has organized a corps of over two hundred experts to make thorough examinations at every camp. He has written a very clear and instructive article for the benefit of these examiners, in an attempt to standardize the examinations for the acceptance or rejection of men for United States Service, which article is published in the *New York Medical Record* for June 9, 1917, and also in the *American Review of Tuberculosis* for August, 1917.

Similar examinations are to be given every few months afterwards, to ascertain if any new cases have developed. With

these careful tests it is hoped that the number of cases in our army can be kept down to the minimum.

In England it has been asked, why have the soldiers themselves in the present war, who are victims of the disease, been willing to enlist in face of the probability of a breakdown staring them in the face? It has been answered that there may be at least four reasons. *First*, they have often been entirely unaware of their condition, or if they did know it they minimized it or ignored it, and joined from patriotism or a spirit of adventure. *Second*, some have thought that the open-air and regular life of a soldier would be as good for their disease as a sanatorium. *Third*, in a spirit of discouragement some have decided that they might as well be killed in battle as die a lingering death from consumption. *Fourth*, some with an unselfish spirit have thought that in this way they could provide pensions for their families who might otherwise become destitute.

In view also of the seeming unnecessarily large numbers of soldiers who have been during the last three years invalided as tuberculous, with the consequent weakening of the military forces and the enormous economic losses, the question naturally arises — why have the medical examiners allowed so many such cases to enter the army?

The country which has suffered from this cause to the greatest extent is undoubtedly France, and to any one who knows the early history of the war, the answer in this case is obvious.

Germany having carefully planned the war in every detail and having made the most thorough and extensive preparations for many years in anticipation of what she expected would be a quick walkover, evidently intended to rush her large and splendidly drilled forces to capture Paris and smash the French republic in one quick blow. Had it not been for the unexpected opposition of brave little Belgium, this would undoubtedly have happened. As it was, France in her comparative unpreparedness was sorely put to it to make an adequate defence. The most strenuous efforts had to be made, and everything had to be done in a hurry, for the Germans were within 14 miles of the city and she was fighting for her very life. There was no time to make careful examinations of soldiers, and even if there had been time, there was need of all the men they could possibly get, and therefore many with the disease were enrolled among the new troops, and afterwards broke down.

England did not feel the same urgent necessity and went at the matter in a much more leisurely way. The number of tuberculous soldiers in her army in the last three years has always been far less than those in the army of France, just as the number in her civil population for many years has always been

less, and she has constantly been making her army examinations for exclusion more rigid. At first undoubtedly in the rivalry for numbers in enlistment, English medical examiners as well as others were influenced to some extent, perhaps unconsciously, to pass men who were unfit, in order to swell the list; but this was soon corrected.

Even before the war tuberculosis has been more prevalent throughout France than in many other countries, and since the war began this condition has been so much worse that the Rockefeller Foundation in the interest of humanity undertook to improve it. As a preliminary measure it sent Dr. Hermann M. Biggs, Health Commissioner of the State of New York, to investigate and report. The results of his investigations are published at length in the *American Review of Tuberculosis* for July, 1917. He demonstrated that this disease is undoubtedly one of the most serious problems of that country, calling for immediate and energetic action. As a result the Rockefeller Foundation, with the assistance of the American Red Cross, at an expense of millions of dollars, under the direction of the French Government, undertakes to fight the disease in true American fashion by a system of antituberculosis popular education with lectures, exhibits, moving pictures, and distribution of literature, travelling from place to place, and by the establishment of tuberculosis dispensaries, and by the special training of physicians, nurses and social workers, of all of whom there has been a great lack in France.

The head of the American delegation is Dr. Livingston Farrand, who was for the first nine years of tuberculosis organization work in the United States the acknowledged genius of the National Society. No one could bring to the task more ability and valuable experience. His associates are Dr. James A. Miller, Mr. Homer Folks and Miss F. E. Crowell of New York City, Prof. S. M. Gunn of Boston, and others.

Ultimately 400 tuberculosis dispensaries will be established throughout France. Already at least four are in operation in Paris, Bordeaux, Marseilles, and Lyons, with facilities for training workers for the others. From these dispensaries, in addition to medical treatment and advice in hygienic living, home relief will be furnished to destitute families where the disease exists. Where patients cannot remain at home without being a menace to their families, hospitals will be built for advanced and moderately advanced cases. Where children have been intimately exposed, they will be furnished with a special *regime* at home, or if this cannot well be done, they will be placed in an institution like a preventorium.

And France herself, since the war began, has been aroused

to action in building barracks for tuberculous soldiers. In May, 1917, ten pavilions were occupied by 700 men. They were erected on the grounds of nine hospitals in Paris, including the Laennec and the Salpêtrière. Four other large hospitals in the suburbs have pavilions for tuberculosis with twice that number of beds. In these pavilions the patients are classified according to the stage of the disease. One great advantage in the location of these pavilions is that they are easily accessible to the families of the sick soldiers.

Dr. Biggs thinks that the reason for the greater prevalence of tuberculosis in France before the war (death rate 3 in 1000 as against 1 in England and $1\frac{1}{2}$ in New York State) is that while England has been carrying on a very successful anti-tuberculosis campaign for many years, France had practically done almost nothing in contrast. What little had been done, especially in seashore sanatoria for children, had come largely from private initiative rather than from the official sanitary authorities. It is strange indeed that France, so highly civilized in most ways, has been so remiss in the treatment of consumptives. In February, 1917, it was estimated that at least 150 000 soldiers had been up to that time returned from the front to their homes because of tuberculosis; and Dr. Biggs figures that if the war should terminate at once, there would be nearly 500 000 cases of the disease to look after, including those among the troops, those among the French war prisoners and civilian prisoners in Germany and in French territory occupied by Germany, and those among the civil population in France elsewhere and among the refugees. The suffering among the prisoners in Germany is reported to have been extreme, from lack of food, of clothing and many of the necessities of life, and tuberculosis in consequence had been exceedingly common. The treatment by Germany of prisoners and conquered peoples has been barbarous in the extreme.

Homer Folks writes home in October that American relief work is being pushed with great energy and is welcomed by the French, who are all the more stimulated to put forth their own efforts. He adds: "If the present rate of progress can be maintained, it is possible that France will have in four years, notwithstanding adverse conditions, an equipment of agencies for prevention of tuberculosis and infant mortality second to no State in America." One of the first measures of importance should be *compulsory registration*, which Le duc de Richelieu of the National Committee says does not now exist in France, and is opposed by the medical profession as a violation of professional secrecy. Even when soldiers are discharged from the army for the active disease, it is not written on the discharge certificate today.

Nor is France the only country which before the war and since has neglected its duty in the antituberculosis crusade. Austria, Hungary and Russia, and perhaps Italy, are almost as bad, and Germany is not so much better off as we should imagine from her boasted *Kultur*. England has easily led the procession of nations for many years in fighting the great white plague, and is now reaping the benefits in her big army. The United States during the last few years, comparatively, has thrown herself into the fight against the disease with wonderful energy and skill, and bids fair soon to outstrip all the rest.

It is high time that we now as a country look another matter fairly and squarely in the face, and make our plans ahead for what we cannot fail to see, unless we are blind, will surely come, — *the return home of a tuberculous army to be cared for*. We are so far away from Europe that we have not even yet got fairly waked up to the seriousness of the war, and we still think, or act as if we thought, that somebody else's ox is being gored, and not ours. It behooves us to make a careful study of what other nations have done, either wisely or unwisely, for their returned consumptive soldiers, and to try to profit by their experiences in making our own plans, and to make them in advance, as far as possible.

PLANS FOR THE FUTURE

In the first place, after the preliminary expert entrance examinations have been made at our 90 or more army and navy camps, as already described, and a certain proportion rejected on account of tuberculosis, it is extremely desirable to get hold of these rejected men, and if possible to arrange treatment for them, not only on their own accounts, but also to prevent their giving the disease to others. For it is admitted to be a communicable disease, and yet there is a great deal of popular misunderstanding on this point, which is very unfortunate. If a consumptive with expectoration is properly instructed how to care for it, and is conscientious and willing and able to care for it, or to have it done for him, he is no more a menace to others than a well man is, or an incipient case without expectoration. But if he is ignorant, or careless or vicious or unwilling or unable to have the sputum properly disposed of, he is liable to give the disease to others, if susceptible, not as he might give scarlet fever, if he had it, on a very short and slight exposure, but particularly after very intimate and prolonged association for months or years in the same house, as in the family relation. Massive infection we call it. It is necessary to dwell on this point, to avoid the dangers of phthisiophobia,

the truly distressing, even if ridiculous, terrors of some unposted persons gifted with "nerves."

To tackle the problem of these men rejected from recruiting stations and camps (as they are now outside of the province of the federal government), the National Association for the Study and Prevention of Tuberculosis has appointed Dr. H. A. Pattison of Rockford, Ill., with the title of Medical Field Secretary. It is his task to try to secure accurate lists of these men, and if possible to induce them to seek proper care; and also on the other hand he sets in motion the tuberculosis machinery of their own city or town and state. And this machinery, thanks to the National Society and its subsidiaries, is now fairly effective. The different Boards of Health, state and local, will now have the names of these recent accessions to the army of the great white plague, many of which they might not have had if we had not entered the war, and proper measures can be taken, as with our civilian population.

So far it has not always been easy to get a list of these rejections; but in those states where "notification" is compulsory (and most states now have this law), the physicians who examine for the federal government can be told that they are amenable and must make the proper returns to the Boards of Health.

Thus the number of *known* cases in the United States will be tremendously increased, and the antituberculosis crusade can be made proportionally effective. The number of *actual* cases may be no greater, however, unless the privations incident to war gradually affect the civilians of this rich country as they have already those of other lands.

As to our soldiers in Europe, in spite of the best precautions a certain number will develop active tuberculosis. What shall be done with them? It has been quite the custom with the other nations, including Germany, to patch up the lighter cases and return them to the front; but they often break down again, and if they do stand the strain for a while, no one knows how soon the patch will give out. Besides, these encouraging cases are thus gradually losing their chances for ultimate recovery. Better and safer to send ours home for treatment at the first indication of trouble, with no thought of return to the trenches. As to sending *advanced* cases home, there is no chance for argument.

And when patients of either grade reach the United States, what shall be done with them?

At present it is estimated that there are about 50 000 beds for the treatment of tuberculosis in the United States, in national and state, in public and private institutions, and the

number of the cases of the disease is many times that. So that now a great many, even before the sick soldiers come back, will of necessity have to be treated at their homes. Partly for this reason and partly because many dislike and refuse institutional treatment, it is not probable that the number of beds will ever approach the number of patients.

The United States Navy Department has maintained for several years a Tuberculosis Sanatorium of 154 beds at New Fort Lyon, Las Animas, Colorado, and the United States Army Department a Tuberculosis Sanatorium of 400 beds at Fort Bayard, New Mexico. All grades are admitted. Of course this accommodation will be entirely insufficient for the future. Undoubtedly the present army and navy sanatoria will be enlarged for war uses, and other national sanatoria will be established. But it is particularly desirable that most of our consumptive soldiers be scattered widely throughout the country and treated in hospitals or sanatoria in different states of our union, where they can be near their homes and families, to diminish the recognized depressing effects of homesickness and to enable their people to see them as often as possible.

The force of this argument is redoubled if the patients are likely to die. If they have a fair chance of improving, with proper care, according to our modern ideas they can do it just as well in their own states as in the most favored locations in the country. For even if the climate in certain sections does offer a few points of superiority, this would be fully if not more than offset by the natural homesickness resulting and the distance from relatives and friends. The modern slogan with this disease is "Not where you live, but how you live."

Nearly all of our states now have sanatoria supported by public funds, besides private sanatoria and hospitals or homes for advanced cases. They could easily be enlarged or additional ones built, and in cases where it seemed necessary or desirable, soldiers and civilians could be treated together, even if it did introduce some difficulties of administration. The expense of enlarging existing local sanatoria by erecting new buildings and preserving the same administration would in most cases be far less than the establishment of entirely new institutions, as would be often necessary if the federal government cared directly for all.

The natural solution of the question would be for most of these tuberculous soldiers (if not sent to their homes) to be transferred to these local (state, county or city) institutions, the expense to be arranged with the United States Government; and the rest of the soldiers to be sent to the federal sanatoria.

In England there has been a great deal of discussion in the medical and daily press, as to whether such soldiers should

be *discharged* from the army or not, when invalided home. The great argument against this has been that after discharge the government loses its authority over them, and that without this authority large numbers of them cannot be trusted to look after their own welfare, and suffer and sometimes unnecessarily die in consequence. Whereas, if not discharged, military discipline can be enforced and they can be compelled to do the right thing. All of which is certainly (in theory at least) perfectly true, and they still receive their pay. An alternative might be considered of a discharge with a pension which should be forfeited if they refused treatment satisfactory to the government. The altruistic question comes up here as to whether it is good for the public policy, and as to whether it pays in the long run to compel people to be good, and as to whether it is best to have laws too much ahead of public sentiment. The fact has been that in England many such soldiers, when not under compulsion, have refused sanatorium treatment entirely or have left the sanatoria too soon and against the judgment of the physicians in a large percentage of cases — some say 40 per cent. — which is often disastrous when the outlook is otherwise hopeful.

Some people in a democracy claim that the compulsory hospitalization of these cases, even for their own good, is too paternalistic, and that public opinion would not allow it, as some oppose compulsory vaccination for similar reasons, or compulsory removal to a small-pox hospital. They say that the sick soldiers, after a long absence, are anxiously longing for the sight of their homes and families, and must not be refused, come what will.

Many, in the discussion of this problem, advise a *medium* course, which is probably the wisest, and suggest that when active cases are discovered, the government, before discharging them from the army, and after allowing them a brief furlough at home, treat them in a sanatorium for at least three months under military discipline, during which time it can often be determined (when it was not obvious before) which cases have a fair chance for industrial improvement, and which are probably incurable. The latter can then have the option of going home, if their people are in a position to care for them properly during their last days, or to a home for incurables. And the favorable cases can have an opportunity for treatment at a public or private sanatorium, or by a physician of their choice at their homes or elsewhere as they may elect.

In either case their three months' compulsory sanatorium treatment under military discipline will be of service to them and to their relatives or friends, especially as regards a practical

knowledge about the destruction of the sputum, the regulation of exercise and rest, food and fresh air. For a thorough day by day education in these essentials is very helpful to such people. Many cases which are obviously incurable can be sent at once to a "home" for consumptives, without the three months' course. When a three months' treatment is suggested, it is not meant that that is all to be done even for the best cases, because very few can reach perfect recovery in so short a time. And even these few should have after-care or medical supervision of some sort.

The division of favorable and unfavorable cases can generally be made with a fair degree of accuracy; but occasionally we meet with surprises, largely perhaps owing to the differing degrees of natural resisting power in different persons, the exact measurement of such resistance being impossible. Some make unexpected improvement, and some disappoint us in our hopes. These cases with surprises are not many, but they exist, and when they are recognized, a new distribution should be made accordingly. There are many advantages in grading patients and in treating them separately, both from an economic standpoint and with a view to results.

In some instances soldier-patients in all grades of the disease can be satisfactorily treated at their homes, both with reference to their own good, and also to the safety of those about them, if the homes are properly located and arranged, just as some civilian patients can be and are now treated at their homes. But these happy results do not by any means always follow. To say nothing of the welfare of the patient himself, often the other members of the family are obliged to suffer from *contagion* as a result of careless or improper management. In the interest of the public health somebody ought to have the power to interfere, if necessary, for the protection of the family, and the Board of Health would seem to be that authority. This power should not be made obnoxious, and should be used with discretion. Sometimes, its very existence, acting as a threat, would eliminate the necessity for its use.

If it is finally decided to scatter throughout the different states many tuberculous soldiers who are not sent to the federal sanatoria, so as to be near their kindred and friends, they will naturally come under different systems of management, as the laws in the various states differ widely from each other.

Many of us think that the policy of the State of Massachusetts is in most respects as wise as any, and might be copied to advantage by others. It is now only partially in operation, but we hope it will be more perfectly and fully developed in the near future.

Massachusetts now has four sanatoria in different parts of the state, — at Rutland (central), North Reading (northeast), Lakeville (southeast) and Westfield (west), which are ultimately designed to treat only incipient and curable cases, but which have hitherto harbored also many advanced and hopeless ones. Rutland of the four has had the largest number by far of hopeful cases, and an effort has been made to send as many of them as possible there. Practically the other three have been so far not much more than Consumptives' "Homes." But this is soon to be done away with, we hope, when all the local tuberculosis hospitals are built. In 1910 the law required that every city in the state of over 50 000 population either build such a hospital for itself or else make arrangements to use the hospital of some other city. In that year Boston and Cambridge were the only cities which had their own, but now about 30 out of 54, including some under 50 000 in population, have them, and the others are expected soon to fall into line. These are for advanced and urgent cases and for cases waiting for admission to the State Sanatoria. Next, County Hospitals were authorized, to supply the needs of smaller towns and country districts, and the first was built at Leeds in Hampshire County, where there is only one city of size, Northampton. When the rest of the County Hospitals are built, they will answer the same purpose as the City Hospitals, to care for far-along patients who can thus be near their families, a blessing which is greatly appreciated in their last days, if they cannot be actually at home.

So the policy of Massachusetts is to cure as many as possible of the hopeful cases in her four state sanatoria, to segregate and isolate advanced consumptives in her State Institution at Tewksbury, and the State Farm at Bridgewater and in all her county, city, town or neighborhood hospitals, where she can give them a good home and especially prevent their infecting others; also by tuberculosis dispensaries, lectures and exhibits to try to discover as many early cases as possible, and to assign all grades to their proper places; also to educate the public generally in hygiene.

For that class in the population which is able to pay for what it gets, there remain the private sanatoria and physicians in private practice, to treat them in their homes, if their homes are suitable for the purpose.

There is another very important class in the community, those who have been cured in sanatoria or in private life. The soldier will swell this list too. They need more or less attention, to prevent backsliding. For in the joy of their newly-found recovery, many seem to think they are now immune,

and before they have gotten thoroughly toughened up, they do many careless things to upset themselves.

Others, perhaps not careless but forced by poverty, feel themselves obliged, against their better judgment, to live and act unwisely. All these people need follow-up work or supervision to keep them straight.

It is needless to add that Uncle Sam, so far as he thinks he can afford it and it seems practicable, will by pensions or other measures furnish financial aid.

Much is heard now about the plans of our government for making over and reëducating as many as possible of our crippled soldiers left by the war, in our Elks' Reconstruction Hospital on the Parker Hill Reservoir Site, and in similar places in different parts of the country.

Something also will undoubtedly be done in reëducating our cured tuberculous soldiers in sanatoria or in colonies. For obvious reasons the reëducation in the two classes will not compare in extensiveness, and particularly because we have learned, especially in the last twenty years, from our experience in rehabilitating people recovered from tuberculosis, that it is in most cases by far the wisest and safest and best plan to send such people back, with instructions how to live better, to their former occupations (unless exceedingly unhygienic), instead of trying to force them all into some form of outdoor life, which on first and superficial thought seemed the proper thing to do. They have become more or less trained or skilled in their former work, and can make a better living at it and with less effort and wear and tear than in something entirely new, and they can therefore afford to be better nourished and housed. To tell a person to get out-door work seems easy and attractive and wholesome and up-to-date; but when you come right down to it practically, you find a wonderful lack of suitable opportunities. Everybody thinks of farm life, for instance. But practically we have been all through that and in most cases it does not work at all. It is too laborious and uneven, and besides it requires knowledge and training which the city man does not have. Neither does he like it, as a rule, and he makes a failure of it. And farmers too from improper living and housing often have tuberculosis. Farm work is sometimes very valuable in sanatoria and colonies as a means for training, but under such circumstances patients work short hours under constant observation and therefore escape harm. When patients are well enough to have some kind of such occupation, they are far happier for it, they escape idleness and laziness, improve physically and morally, and can sometimes also thus acquire skill in a handicraft from which they may afterwards get a livelihood. When

they are not well enough for this, they should possess their souls in patience and wait until they are. In England it has recently been shown that when soldiers in sanatoria who are physically fit for it do have such interesting occupation, they are more contented while waiting for recovery, more willing to stay a proper time, and clamor less for going home too soon.

In many places there has recently been a movement toward the introduction of regular workshops with proper instruction into sanatoria or tuberculosis colonies, which shall not only bear the relationship to them of gymnasias to colleges, but also perhaps lead to a means of future livelihood. Not only have some private sanatoria established these workshops, but also the State of New York has passed a law authorizing their establishment in connection with tuberculosis hospitals and sanatoria in counties, cities, towns and villages. (Chap. 341, Laws of 1913.)

HOW THE TUBERCULOSIS SPECIALIST CAN BEST HELP THE GENERAL PHYSICIAN IN THE ANTI-TUBER- CULOSIS CAMPAIGN*

H. F. GAMMONS, Ass't Supt., State Tuberculosis Sanitorium, Carlsbad, Texas

In conversing with different general physicians in regard to the diagnosis and treatment of tuberculosis, I have marked their varied ideas regarding the essential signs and symptoms in diagnosis and their erroneous ideas as to the proper treatment.

One physician reported that he had understood that finding a râle in the chest, and then having the patient cough and still find the râle, meant tuberculosis, and that he was so informed by a tuberculosis specialist. This information to a general man is useless, for the simple reason that the average general physician is so inexperienced in the use of the stethoscope that what he finds is of no significance.

Other physicians have said that they understood that finding tubercle bacilli in the sputum was the only way to diagnose tuberculosis. Others have based their diagnosis on such symptoms as subnormal morning temperature and elevated evening temperature. There are, even at this late date, some physicians who think that one must inherit tuberculosis.

If we wait for the tubercle bacilli to be demonstrated in the sputum, our diagnosis is too late as a rule. We do not get a subnormal temperature in all cases; we often find the evening temperature normal in active cases, or even in some advanced cases which are open and active.

Almost every issue of the good medical journals has one or

* Read at the 4th Texas District Medical Meeting, Brownwood, Texas, Nov. 7, 1917

more articles on tuberculosis, but the papers are, as a rule, technical and not practical to the general man, but are more suited to a convention of specialists.

It is safe to say that the ex-patient from a good sanatorium discovers more cases of tuberculosis than the general physician because the ex-patient, though not as scientific as the general physician, has learned thoroughly the few practical points in diagnosis and treatment from the tuberculosis experts who have had charge of him and from his own observation of his fellow-patients.

The National Association for the Study and Prevention of Tuberculosis realizes the former inadequate teaching in the medical schools, and is campaigning for more thorough training in this work, but it remains for the specialist to help the general man, whose special training is remote or inadequate, to make an early diagnosis and start the proper treatments.

Every day in sanatorium work one sees the tragedies resulting from the general practitioner's lack of training in tuberculosis work. I have often had patients to tell me that they felt in the beginning of their illness that they had tuberculosis but their doctor had said, "No person that looks as well as you do can have tuberculosis."

Many physicians put their patients on exercise as soon as they have diagnosed the disease as tuberculosis, not taking any account of their symptoms. Others give tuberculin; still others advise their patients to go West and rough it; and a number give creasote or some of its derivatives in large doses and thereby ruin the stomach, thus doing away with the help of a necessary organ. The idea of over-feeding is a vivid one, but is no longer advised by specialists.

In regard to prevention, very few doctors use the chances which they have to help in preventing the disease. Dr. Knoph in his prize essay on tuberculosis says, "In order successfully to combat tuberculosis as a disease of the masses, it requires the combined efforts of a wise government, well trained doctors and an intelligent public." The physician must be well trained to combat the disease successfully. From a financial standpoint, the physician must be well trained, because most human ills are directly or indirectly due to tuberculosis, and the layman is learning so much about the disease and who to go to for treatment, that he will eventually pass by the average general physician. The general physician has the best opportunity of preventing disease, if he will but take it, not only in regard to transmission of bacilli and in preventing the predisposing causes, but also because of his greater interest in preventive measures directed to public health.

It will be impracticable for the general physician to be well trained in the sense that he will be an expert with the stethoscope, as that will require many weeks of clinical work with a lot of material, and this would take too much of the doctor's time.

It is both possible and practicable for every physician to be well trained in the early subjective symptoms, and in the diagnosis and home treatment of tuberculosis. The following are the subjective symptoms found in early tuberculosis:

- | | |
|-----------------------|---------------------------------|
| 1. Tired feeling, | 6. Spitting of blood, |
| 2. Nervousness, | 7. Hoarseness or weak voice, |
| 3. Indigestion, | 8. Loss of appetite, weight and |
| 4. Cough, | strength, |
| 5. Pain in the chest, | 9. Slight sweating when asleep. |

Persistency is the key-note of these symptoms, that is, one will have the tired feeling, cough, *etc.*, for number of successive days or weeks. All cases will not have all these symptoms, but they will have most of them. The tired feeling is especially frequent and as a rule is the first symptom noticed.

The general physician can do away with the objective symptoms, except possibly the temperature, and even this will help more in treatment than in diagnosis. I have often seen patients have normal temperatures under ordinary methods of living, then after a few days in the sanatorium develop an evening temperature.

With the above symptoms, the general physician can very readily make a diagnosis. It will be necessary for him always to be suspecting tuberculosis, and he must remember that a big, fat, strong-looking person can have tuberculosis.

A general physician suspecting tuberculosis should see his patient every day or every two days for some time, and go over his symptoms, taking temperature and pulse until his diagnosis is made, and then the patient should be seen every few days. It has been the tendency of physicians not to make enough visits on tuberculosis patients, but they need encouragement and advice more than any other. If there is any doubt in the diagnosis or treatment, a specialist should be called in.

TREATMENT

Rest is the first consideration in treatment. It is best for the patient to stay in bed all the time for the first week. Keep a chart of his temperature and pulse at 7 A.M., 3.30 and 7.30 P.M.

The temperature is the best guide we have as to the progress

or recession of the disease, and if it persists more rest is indicated. If the temperature gets down to normal for a week, then the patient may be allowed to sit up 15 minutes twice a day, then 30 minutes, *etc.*, providing there are no contraindications such as spitting of blood or excessive cough or marked weakness. The time for sitting up is increased and decreased according to the fluctuation of the temperature.

In the early stages of tuberculosis the patient's nervous system is very much poisoned and needs more rest than ordinarily, therefore visitors should be barred; they are as harmful as is exercise and at times, on account of the nervous manifestations, it is necessary for the patient to have absolute rest.

Fresh air at all times, sunshine and a well-mixed diet are essentials, but over-feeding is bad. One will gain more weight and have better digestion with rest and moderate feeding.

Tuberculin treatment and pneumothorax, as a rule, are outside the province of the general physician.

Medicines are directed to toning up the system, stopping the cough and building up the blood. I believe every case should have a course of iron, and some digestant is often indicated.

Optimism is most necessary, but the patient must be told the truth and his coöperation obtained.

PREVENTION

When we consider prevention, we must recall Dr. Hawes' statement to the effect that we could rid the country of the disease in a few years if we would use the means at hand.

The general physician should see that his patients cover their mouths with tissue when coughing or sneezing, and that they burn these used tissues. Sputum must be expectorated in cups which are to be kept covered from flies and destroyed by burning. The patient's eating utensils, *etc.*, must be kept separate and sterilized after using.

Patients should sleep alone in the open air. Babies' milk should be sterilized. The babies should be kept off the germ-ridden floor, away from cases of open tuberculosis and the kissing public in general. All foods or anything that is put into the mouth should be thoroughly protected from contamination by infected patients.

SUMMARY

The specialist can best help the general physician in the anti-tuberculosis campaign as follows:

1. By advising him to avoid depending on his stethoscopic findings.

2. By advising him always to be on the lookout for tuberculosis, whether or not his patient appears healthy, and to look for the following subjective symptoms of early tuberculosis: 1. Tired feeling; 2. nervousness; 3. indigestion; 4. cough; 5. pain in the chest; 6. spitting of blood; 7. hoarseness; 8. loss of appetite, weight and strength; 9. slight sweating when asleep.

3. By advising him that the treatment consists of rest and graduated exercise according to the fluctuation of the temperature; fresh air all the time; moderate mixed diet; sunshine and optimism.

4. By advising him that his part in prevention is as follows: 1. Have patient cover mouth with tissue when coughing or sneezing and then burn tissue, 2. Have patient expectorate in sputum cups which must be kept covered and destroyed by burning. 3. Have patient's eating utensils sterilized. 4. Have patient sleep alone in room or porch with good circulation of air. 5. Sterilize cow's milk for the babies and keep them away from all possible infection. 6. Protect all material ingested by proper coverings where possible.

APPENDIX VERMIFORMIS

With Special Reference to Comparative Anatomy. A Plea for Prophylactic Appendicectomy

DR. HENRY F. LIBBY

(From the Libby Museum, Wolfboro, N. H.)

EMBRYOLOGY

The first indication of the cæcum in the foetus may be noticed at about the sixth week of pregnancy. Before that time there is no differentiation between small and large intestine, and the entire tract is a simple loop. The cæcal bud arises on the descending limb of the loop and at first lies in the lower left portion of the abdomen. During the subsequent rotation of the colon and the postural readjustment resulting from the growth of the small intestine the cæcum comes to lie in the upper right abdominal quadrant, in close proximity to the liver. Thence it pushes downward until it assumes its final position in the right lower segment (Figs. 1-4). Cases of adults have been reported in whom the primary left position of the cæcum had persisted, and, according to Huntington, in several species of lower animals, for instance amphioxus, certain teleosts, lower amphibians and others, this condition is permanent and normal.

During the first stage of its foetal development the human cæcum is a rounded blind pouch without indication of an appendix. The differentiation of the latter organ is due to an

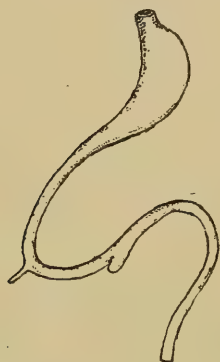


Fig. 1 Intestinal canal in stage of umbilical loop — before rotation.

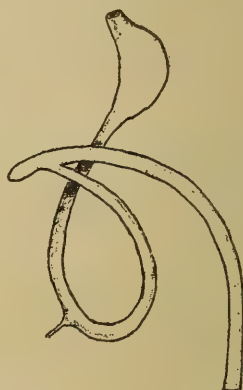


Fig. 2. First stage in rotation, colon crossing duodenum.



Fig. 3. Second stage in rotation — rotation of small intestine.



Fig. 4. Schema of intestinal canal after complete rotation and descent of cæcum.

(Figs. 1-4 are drawn after Huntington)

unequal rate of growth: the lack of development of the distal portion results in the formation of the vermiform process, while the more rapidly growing proximal piece forms the cæcum proper.

ANATOMY

The *processus vermiformis* (vermiform appendix) is a worm-like outgrowth from the lower convexity of the cæcum. (Fig. 5.) As will be shown later it is, evolutionally speaking, the remnant of a limited retrogression that has taken place in the human cæcum.

The average length of the human appendix has been given variously by different investigators: thus, Monks and Blake, in 641 autopsies, found it to be 7.9 cm.; Fawcett and Blatchford give it as 8.4 cm.; Nowicki says its length depends more or less upon the age of the individual and finds the average for men to be 7.3 cm. and for women 7.1 cm., basing these rather

low figures upon material from 420 necropsies and 18 coeliotomies; Sudsuki's average length of 500 appendices is 8.6 cm.; other authors quoted by Nowicki give 8.25, 8.5, and 6 to 8 cm. as average lengths. The greatest recorded length is probably that of Sonnenburg's case, whose appendix measured 25 cm.; Monks and Blake found one 24 cm. long, and others have reported lengths of 23 cm. Many very short appendices have been found by various observers, and very few cases of total absence of the organ are on record.

The appendix attains its greatest length during early adult life. Nowicki found it to be longest between ages twenty and forty, and Sudsuki between eleven and twenty. The latter claims that Ribbert supports him in this contention.

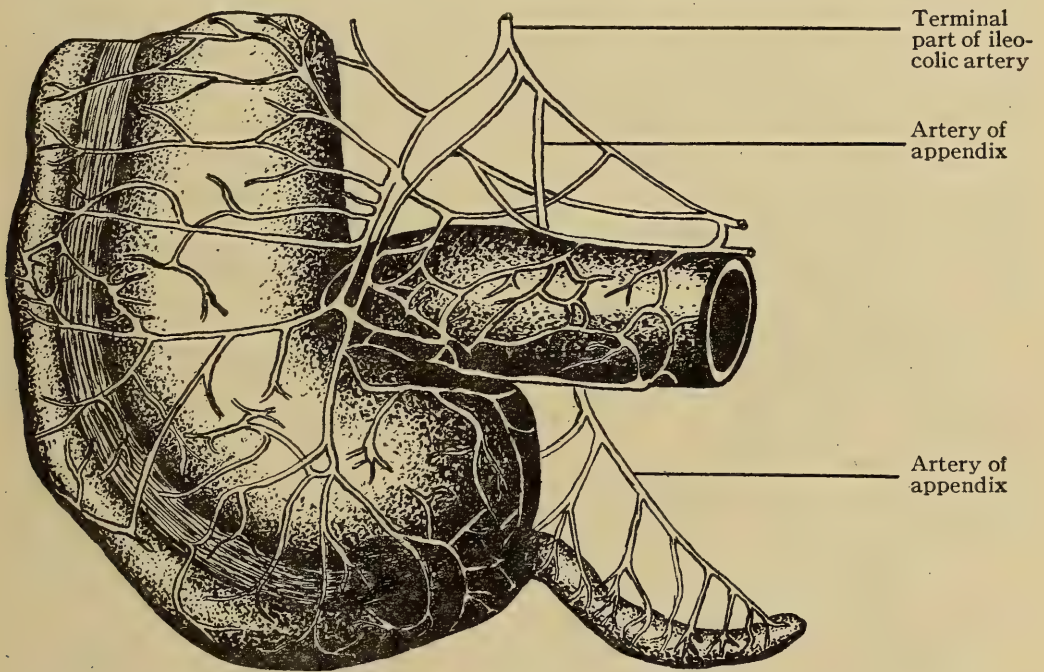


Fig. 5. Human ileocolic junction and appendix, with their blood supply. (Drawn after Gray).

The difference of length of appendix in the two sexes is by some thought to be negligible. Berry, however, claims that the male appendix is about one cm. longer than that of the female, and Nowicki, as shown above, finds a difference of 0.2 cm.

The diameter of the appendix, like its length, is subject to much variation; its average is about 6 mm. at the base and 5mm. at the apex.

The point of attachment to the cæcum is fairly constant, being about 1.7 cm. (according to Berry) from the distal end of the ileum, on the postero-mesial aspect of the cæcal pouch. Because of the free motility of the distal portion of the appendix, its position is extremely variable; but it usually takes a downward course, more often inward or backward than outward and

forward. It may, however, be directed upward and be wholly behind the cæcum, or it may be found in one of the many neighboring peritoneal fossæ.

During the descent from its primitive (foetal) hepatic position (*v. p.* 1) the cæcum pushes its way through the peritoneum. During this process, says Baird, the distal end of the appendix may become anchored high up, and the organ then comes to lie post-peritoneally, becomes stretched, usually more or less attenuated in diameter and sometimes is nothing more than a pale, filiform, non-lumenated, fibrous cord; it then has no peritoneal covering of its own, and it shows microscopic evidence of atrophic degeneration, almost complete absence of muscle fibres and an increase in fibrous connective tissue.

Because of the fact that both cæcum and appendix are entirely surrounded by peritoneum they cannot, strictly speaking, be regarded as having a mesentery; nevertheless, there is a fold of peritoneum attached for a variable length to the appendix and to the cæcum. This peritoneal fold is termed the meso-appendix and contains the artery of the vermiform appendix, which vessel runs along the free edge of the fold and is, presumably, the cause of this plication of the peritoneum (Piersol). The mesenteriolum is missing in rare cases (Nowicki).

The opening of the appendix from the cæcum is sometimes very sharply defined as a circular or oval orifice four to twelve millimeters in diameter; at other times the cæcum narrows down so gradually that the exact beginning of the appendicular lumen cannot be located. This condition is regularly found in newly-born children. If the appendicular axis strikes the surface of the cæcum obliquely then the edge of the opening lying in the acute angle projects somewhat to form what is known as Gerlach's valve. This is inconstantly present, however, being absent when the axis of the appendix strikes the cæcal wall perpendicularly, and even when present it may be so slight as to be difficult to demonstrate. It is not a valve at all, in the strict sense of the word, but merely a reduplication of the cæcal mucosa; physiologically it is powerless to prevent free access to or exit from the lumen of the appendix. Sudsuki claims that Gerlach's valve is missing in about two-thirds of all individuals.

The blood supply of the appendix comes from the posterior division of the ileo-colic artery (Fig. 5). The artery of the vermiform process courses along the free edge of the meso-appendix to near the tip of the process. It gives off many branches to the appendix, insuring a fairly rich blood supply. According to Kelly the blood supply is poorer on the side opposite the attachment of the mesenteriolum, and Nowicki says that the distal end receives less blood than the other portions.

The superior mesenteric plexus furnishes the nerve supply to both appendix and cæcum.

Congenital absence of the appendix is rare. Schridde, in 1904, found records of only six cases and added one himself, stating that the authenticity of some of the earlier cases must be doubted. Miloslavich reports congenital absence of the appendix in a sixty-year-old woman, and Marshall and Edwards also have written of "Agenesis of the Vermiform Appendix."

MICROSCOPIC ANATOMY

The general microscopic structure of the vermiform appendix resembles more or less closely that of the other portions of the gastro-intestinal tract, but the resemblance to the large intestine, of which the appendix is a part, is particularly marked. Like all other intestines the appendix presents the general arrangement into histological strata or layers of distinct types of tissue (Fig. 6).

The outer or peritoneal covering envelops the entire organ except where the attachment of the meso-appendix leaves a space just large enough for the passage of blood and lymph vessels and nerves. The *serosa* in the adult is a fine, barely visible, grayish-white covering, 0.5–0.75 mm. thick. It is made up of a single surface layer of flat mesothelial cells and a deeper layer of fibrous and elastic tissue, the *tunica propria*. Beneath this there is a variable amount of subperitoneal connective tissue which is usually rarely distinguishable from the tunica propria. The subperitoneum and the tunica propria carry blood vessels and nerves.

The second tissue stratum of the appendix is the *tunica muscularis*. It is made up of smooth or involuntary muscle fibres and subdivided into two layers, an outer, less robust, longitudinal one and an inner, thicker, circular one. The longitudinal musculature of the colon is distributed irregularly and presents three macroscopically well defined thickenings, the *tæniæ coli*; but in the appendix the outer muscle as well as the circular layer is arranged with approximate uniformity over the entire organ except at points where it curves rather sharply; here the muscle is very apt to be thinned on the one side and correspondingly hypertrophied on the other (Aschoff). At birth the musculature is very thin.

The *submucous coat* is usually fairly thick and consists of connective tissue, fat cells, blood and lymph vessels in considerable numbers, and nerves.

The *mucous membrane* of the appendix is remarkable chiefly for the large amount of lymphoid tissue that it contains, and

for the practical absence of the villi that are so prominent in other portions of the intestinal tract. Villi are present up to about the fifth month of intra-uterine life, but after that they flatten out and disappear (Stoehr), due, no doubt, to lack of space necessary to further development. The lymphnodes, on the other hand, increase rapidly in number until they form a

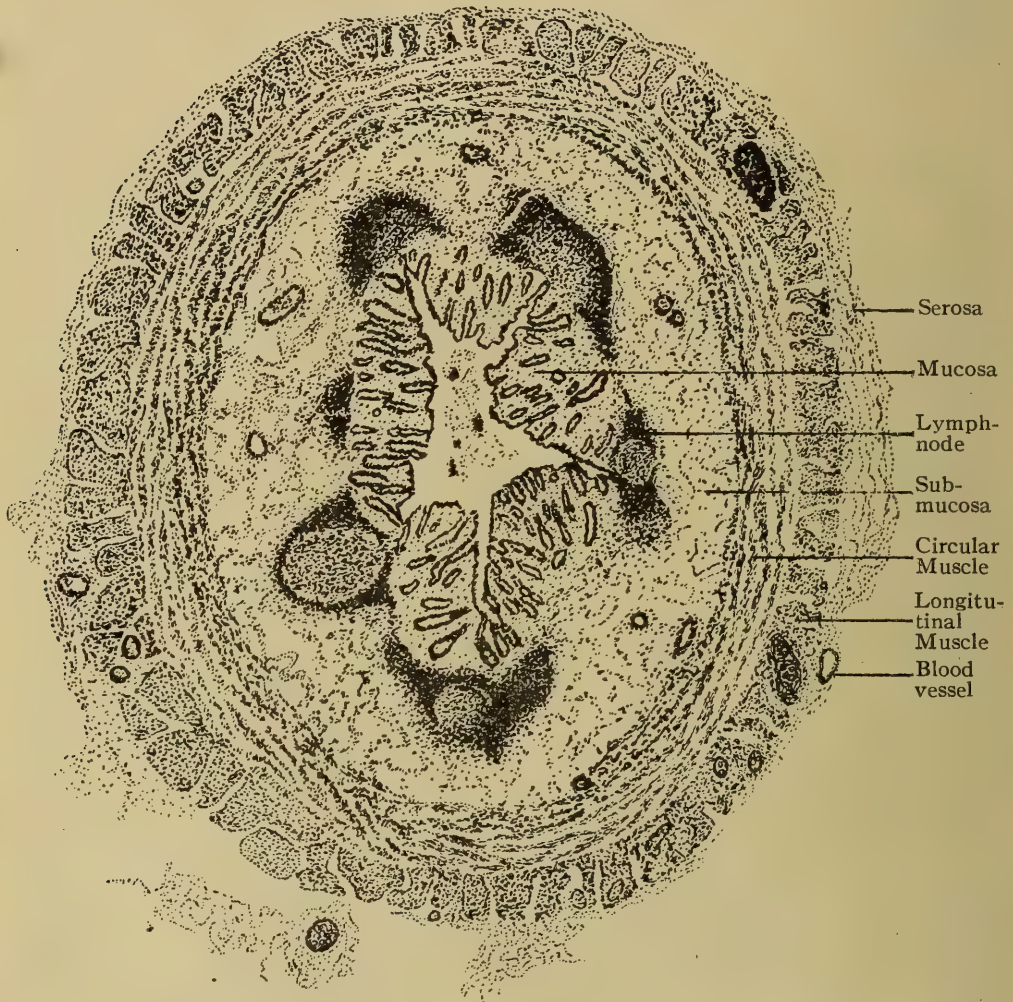


Fig. 6. Cross section of proximal portion of vermiform appendix.

more or less continuous and confluent ring of lymphoid tissue around the entire organ. The development of lymphoid tissue may be so great that the submucosa is involved by it.

The *glands* of the appendix are fairly numerous, and they are, for the most part, simple straight or convoluted tubes, occasionally forked. They correspond to the crypts of Lieberkuehn found in the large and small intestines, and represent, like them, depressions in the mucosa. The epithelium of these glands is of the simple columnar type and contains a fair number of goblet cells distended with mucus.

The pale gray mucosa of the empty appendix is thrown into deep folds between which lie deep furrows or crypts. The epithelium consists of simple cylindric cells which are, on the whole, more flattened than those of the remainder of the gut, but which have the same general characteristics. They are composed of a more or less granular protoplasm, a nucleus mostly oval in shape, and probably a membrane. Their free surface carries the so-called basilar border or cuticular zone, a well defined, for intestinal epithelium characteristic, continuous band exhibiting fine vertical striation. The significance of these markings has not been determined. Over the summits of the numerous appendicular lymphnodes the epithelium is sometimes greatly flattened, and goblet cells are few in number, but in the crypts the cells are more columnar, and goblet cells are numerous. The fact that sometimes there are more goblet cells present and at other times more ciliated epithelium seems to depend also upon the contents of the lumen, stagnation of fæces and possibly other influences.

At birth there is very little lymphatic tissue and a more or less smooth mucosa with numerous goblet cells. During infancy and childhood the lymphatic tissue slowly and steadily develops, goblet cells become less numerous, and the mucosa becomes folded until in the adult it presents definite deep folds which run in all directions and are of various depths. These folds are probably permanent, because peristalsis of the appendix has not been observed (Kroenig, Kraske), not even during scopolamin-morphin narcosis when the remainder of the intestinal tract was actively peristaltic. The mucous folds gain their greatest development in the proximal third, which shows four or five of them, the middle third has three or four and the distal two or three.

The lumen of the appendix is narrow and usually irregular in outline. This irregularity is the result of the plication of the mucosa. Cross-sections at different portions show that, in general, there are about four such folds in the proximal portion, three in the middle and two near the tip; so that the sectional shape of the lumen resembles a star near the cæcum (Fig. 6) and a narrow cleft at the distal end. This arrangement is, however, often lacking even in normal appendices, and is probably found in less than half of all individuals over forty years old. Fæces are found in the lumen in fifty per cent. of all cases, but this is not pathological. Their presence tends to smooth out the folds, and this is of considerable practical importance, because bacteria have less opportunity to find lodgment. Thus, Achoff found that out of 213 fæces-containing appendices only 46 were acutely diseased, whereas of 152 fæces-

free ones 80 showed lesions; whether or not the presence of fæces in itself favors bacterial growth is another question. The size of the appendicular lumen has a practical bearing; funnel-shaped appendices, because of their large lumina, are rarely obliterated or inflamed (Oberndorfer); in fact, these wide appendices behave more nearly like the remainder of the intestinal tract. (Conversely, very narrow Meckel's diverticula may act like appendices and become inflamed.)

COMPARATIVE ANATOMY

The human appendix is unquestionably a rudimentary structure, a remnant of an organ that was at one time of functional importance. A comparative study of human and lower vertebrate cæca leaves no doubt as to the truth of this. Few organs show greater structural diversity than do the cæca of various animals, being lacking in some species and assuming relatively tremendous dimensions in others.

It is easily demonstrable that diet and the consequent functional requirements of the intestinal tract are the determining causes of this variability of the ileo-colic junction. Herbivora possess well developed cæcal pouches, carnivora usually have small ones or none at all, and omnivora, including man, take an intermediate position.

This, of course, depends upon the relative nutritive value of vegetable and meat diets. Plant eaters consume great quantities of food relatively poor in readily digestible and assimilable material, but rich in cellulose and fibre. Symbiotic bacterial decomposition is necessary to prepare this otherwise indigestible matter, and for this purpose it is retained in the cæcum, mixed with the digestive secretions of the small intestines and with bacteria, to allow preparation and subsequent absorption of any nutriment that it may contain. It is for the same reason that the entire intestinal tract, and particularly the colon, is relatively much longer in herbivora than in carnivora, and the large intestine shows considerable sacculation in the former, all of which increases the intestinal absorbing surfaces to a maximum, and food requires a greater length of time for its passage through the canal. Flesh food, on the contrary, is easily digested and contains but little waste; there is no need for storage, hence cæca of carnivores are very simple, or they may be wanting; the intestinal canal is short, and food passes through it relatively quickly.

A striking example of the effect of diet on the type of ileo-colic junction in one and the same order of mammalia is afforded by the *marsupialia*. This remarkable group includes

the purely herbivorous koala (*Phascolarctos cinereus*), with an enormous sacculated cæcum (Fig. 7), and the carnivorous Tasmanian devil (*Dasyurus viverrinus*) in which, according to Huntington, the ileo-colic junction "is simple, marked externally by a circular constriction and internally by an annular

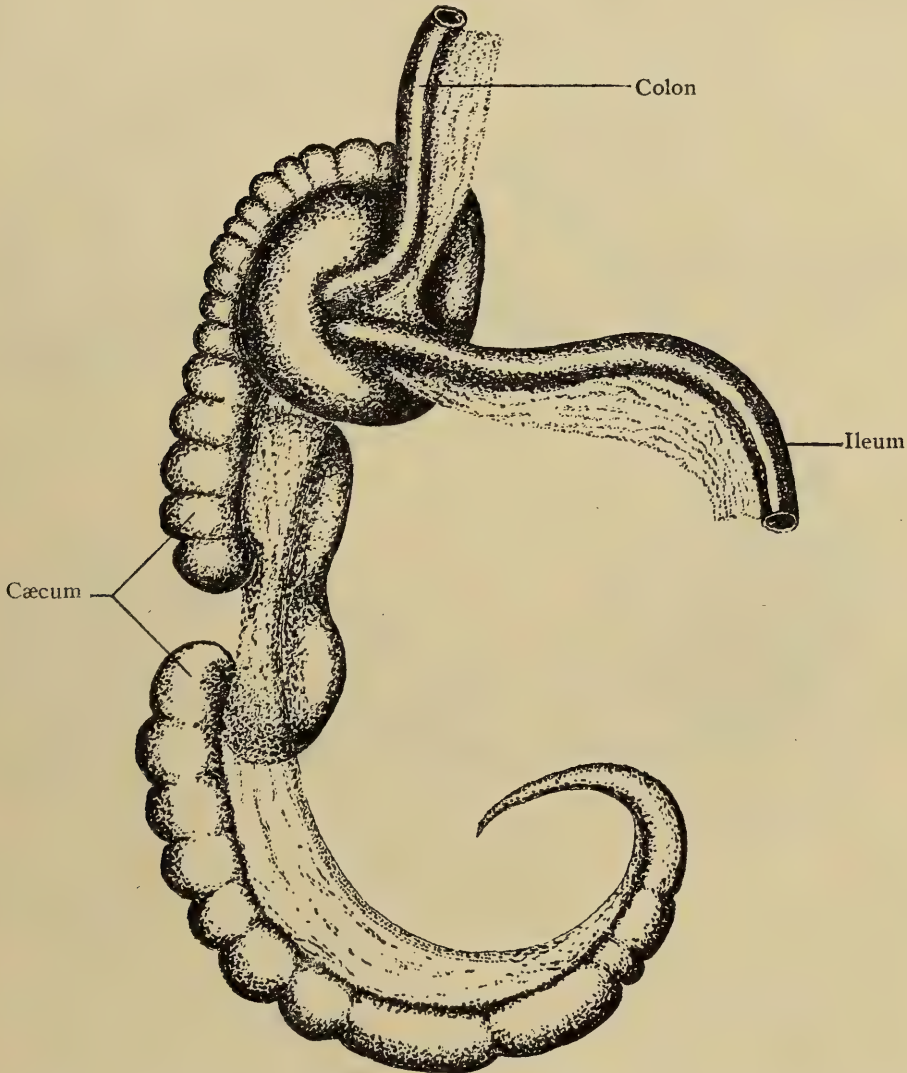


Fig. 7. Ileo-colic junction of *Phascolarctos cinereus*: Koala (Drawn from Huntington.)

valve." (Fig. 8.) Between these two extremes the marsupials include various transitional types; for instance, the opossum, kangaroo and wallaby have fairly large cæca; those of the bandicoots (*Peramelidæ*) are simpler and smaller in size; the wombat's cæcum is short and sacculated and is provided with an appendix very similar to that of man and anthropoid apes (Fig. 9). This single order, therefore, illustrates the entire range of evolutionary changes affecting the cæcum.

As for man, unquestionably his cæcum was at one time considerably larger or, rather, what is now the appendix was

then the distal piece of the functionally important cæcum.¹ During centuries of progress and evolution the distal portion of the organ has undergone atrophic changes affecting both its diameter and length. What the future of this remnant shall be seems plainly evident. Even now very short appendices are found, and cases with total congenital absence of the organ are on record.

Among the lower mammals the wombat (*Phascolomis wombat*) serves as an excellent example of what we may expect

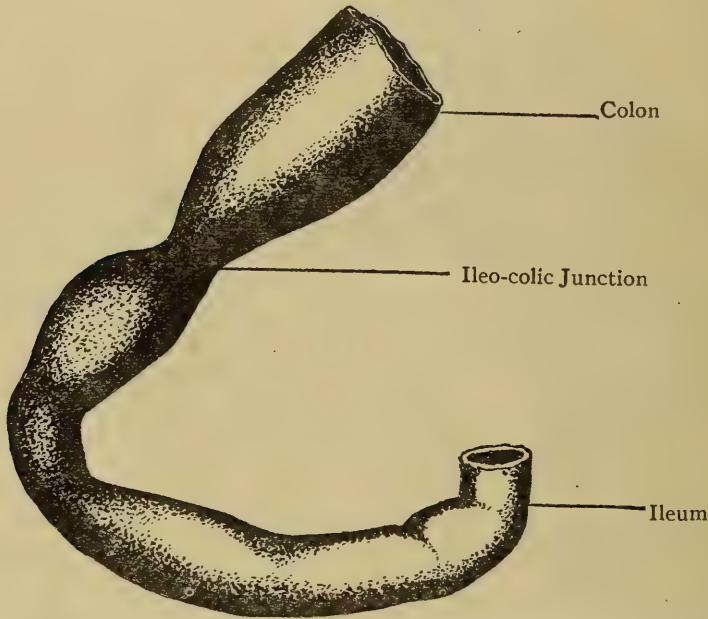


Fig. 8. Ileo-colic junction of *Dasyurus viverrinus*, Tasmanian devil.
(Modified drawing after Huntington.)

the future of the human appendix to be. Individuals of this species possess a true vermiform appendix, and Deneen divides them into groups according to the arrangement of this organ.

These types are shown in Fig. 9. The appendix is gradually pushed to the left, becomes adherent to and incorporated with the wall of the ileum and finally, in *type D*, disappears. This becomes doubly significant in view of the fact that Treves has divided the human cæcum into four types: (a) infantile type, with muscle bands equidistant; (b) cæcum more quadrilateral, appendix appearing between two bulging sacculi; (c) apex turned to the left and posterior; the base of the appendix is brought nearer the ileo-cæcal valve; a false apex is formed by the highly developed right cæcal pouch; (d) right sacculus relatively large, while the left has disappeared; the root of the appendix appears to spring almost from the ileo-colic junction.

¹ The 'unusually lengthy appendices encountered occasionally at necropsy or operation (*vide supra*) are, perhaps, an indication of the original length of the human cæcum.

In man as in the wombat, therefore, there is a gradual shift of the appendiceal root to the left toward the ileal termination, the fourth human type being strikingly similar to *type A* of the wombat; and it seems not unreasonable to suppose that many years hence the human appendix will resemble that of the wombat of today, and that, finally, it will entirely disappear.

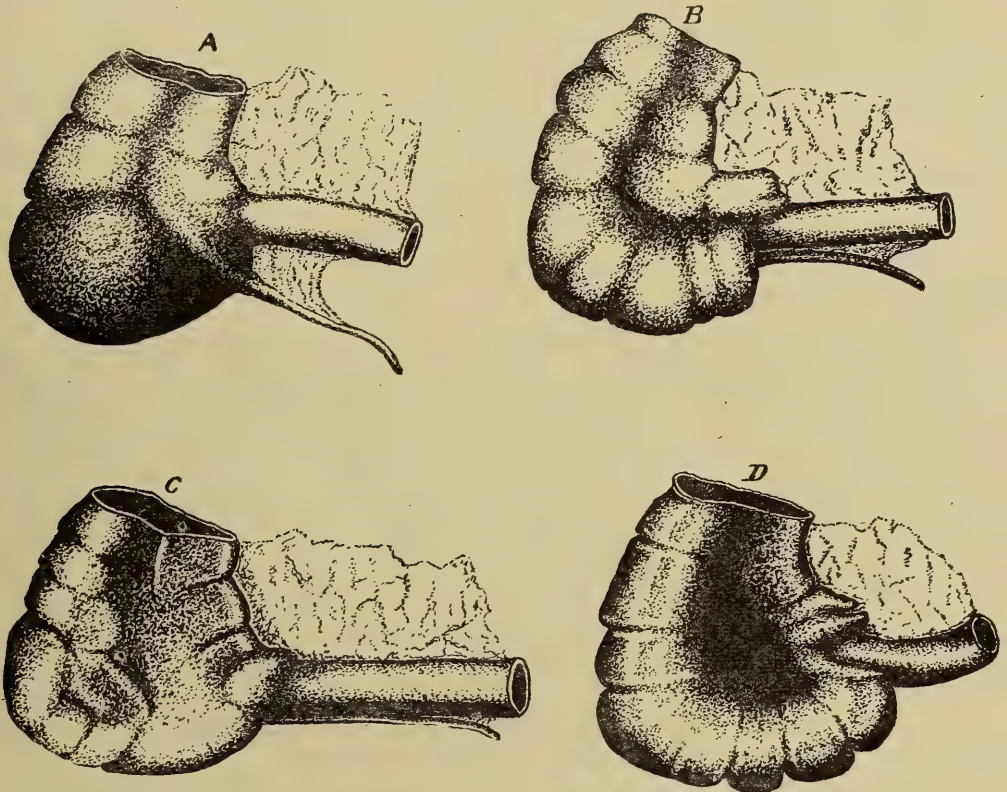


Fig. 9 Types of ileo-colic junctions found in *Phascolomis wombat*.

- A. Simulates human type IV of Treves' classification.
- B. Appendix displaced to extreme left of cæcum.
- C. Appendix is becoming incorporated in wall of ileum.
- D. Appendix has disappeared.

(Drawings modified after Deneen)

RETROGRESSIONAL CHANGES OF THE VERMIFORM PROCESS

It is but natural that an organ that is the useless remnant of a portion of the cæcal pouch should show involutional changes. By the majority of authors (Ribbert, Oppenheim, Morris, Sudsuki, *etc.*) these are looked upon as physiological retrogressions rather than results of pathologic processes. A strong minority (Aschoff's school) holds, however, that obliterations and fibrous degenerations are always the result of inflammation. For the present we must accept the opinion of the majority. There seems, in fact, to be a difference between the fibroid degeneration of involution and the fibrosis or scar formation following disease. In involutional fibrosis the normal structure of the appendix disappears gradually, the nerve filaments

persisting longest, whereas in scar tissue there is an immediate loss of nerves along with the other elements (Morris).

Retrogressional and involutional changes that are apparently physiological:

Ribbert says that the appendix is an organ which, by reason of its uselessness, begins at an early period to undergo involution; indeed, 25 per cent. of all individuals between the ages of thirty and forty show stenosis or obliteration of the appendiceal lumen. Nowicki found obliterated organs in 72 per cent. of 420 cases, and of these, 54 per cent. were total obliterations. Sudsuki says that nearly every fourth person has a partially or wholly obliterated vermiform process; and in individuals over 70 years old the number is even greater, every other one showing this abnormality. This frequency seems to prove that it is not always the result of a pathological process but often involutional.

This effacement is gradual and must be considered, in a large degree, responsible for many of the inflammatory lesions of the organ. It is the result of a very gradual and rather evenly progressive fibrosis, and, as ought to be expected, it seems to begin almost always at the distal end and involves primarily only the lymphnodes and the submucosa. The submucous fibrous tissue increases in amount, the lymphnodes disappear slowly, apparently from pressure of the contracting fibrous ring, the mucous membrane goes next, and the muscular coat may be wholly destroyed. Blood vessels and, finally, nerves are often pinched out. Sometimes the fibrosis, instead of being symmetrical, occurs in localized areas.

This whole process, which Morris calls fibroid degeneration, as opposed to infective (intrinsic or extrinsic) and congestive degeneration, may cause reflex pains due to pressure of contracting fibrous tissue upon nerve filaments; and the gradually narrowing lumen is a potential danger in that it affords an excellent locus for bacterial proliferation and a point of departure for inflammatory processes.

Beside these retrogressional changes just described the normal appendix may show histological variations due entirely to environment and contents of lumen. These have already been touched upon in the section treating of microscopical anatomy. An interesting observation, one with a practical aspect, has been made by Baird, who has found in several cases presenting rather indefinite abdominal symptoms that the appendix was kinked because of the presence of a thickening or contraction of the mesenterium, or of a light band of peritoneum stretching from the terminal ileum. This kink, usually situated one inch from the proximal end of the appendix, is

not a stricture in the limited sense of the word, because the latter is a product of intrinsic inflammatory processes with histological mural changes; the kinks, on the other hand, are the result of external traction that leaves the appendicular walls histologically normal.

PHYSIOLOGY

It may seem and undoubtedly is paradoxical to treat of the physiology of an organ that is generally regarded as functionless. Most text-books on physiology either do not mention the appendix vermiformis at all or speak of it in passing merely as a part of the cæcum. It is not amiss, however, particularly in this connection, to dwell as well upon the lack of function as to mention some of the theories that were and to some extent still are extant regarding possible physiologic activities of this small but prominent organ.

Because of the relatively tremendous amount of lymphoid tissue (Fig. 6) found in the appendix it was thought to possess anti-bacterial properties and was held to be particularly potent in protecting the body against microorganisms in the ileo-cæcal region. This benevolent influence was considered to result from the secretion derived from the lymphnodes. Baird, for instance, thinks that any malformation, such as the kinks he has described, that prevents the normal secretion of the appendix from entering the cæcum, favors multiplication of bacteria in this receptacle. The consequent fermentation of the cæcal contents may result in diarrhœa or constipation with all their sequelæ, including reflex symptoms in the upper abdomen.

If, however, the appendicular secretion be so important that its lack may be followed by such dire consequences it would seem curious that removal of the appendix does not, in appreciable degree, produce similar results. As far as we are aware, an individual *sine appendice* shows no symptoms that are directly traceable to the absence of this organ. On the contrary, it is not difficult to prove that such individuals are less prone to be victims of abdominal symptoms, both those definitely referable to the appendicular region and others that are indefinite and reflex, including a variety of aches and pains, "indigestion," "dyspepsia," "biliousness," etc.

It has been shown that the human appendix is devoid of peristaltic motion, even under scopolamin-morphin narcosis, during which the remainder of the intestinal tract is actively peristaltic. Waller, however, believes that peristalsis of the appendix does occur and also an "emptying and filling" action. He thinks, furthermore, that this attenuated piece of gut is an important part of the ileo-colic neural mechanism which sends reflex stimuli to other parts of the gastro-intestinal tract.

APPENDICITIS

Inflammation of the appendix is unquestionably one of the most prominent surgical problems of today, and it is likewise of considerable economic importance. The appendix is a functionless vestigial organ and, therefore, possessed of low vitality and feeble resisting power. "In addition, its dependent position, its communication by an orifice, often more or less narrowed, with that portion of the intestine in which inspissation of intestinal contents first occurs, while at the same time it is removed from the direct faecal current — all appear to be conditions so markedly predisposing to inflammatory attacks that we need look no further for a sufficient explanation of the extraordinary frequency of appendicitis." (*American Textbook of Surgery*, ed. 4.)

According to Aschoff the beginning of appendicitis is never a diffuse catarrhal condition, but always a *primary infection* taking place at the bottom of one of the many furrows of the mucous membrane. Neutrophilic leukocytes are attracted by bacterial localization and invasion, and these defenders of our economy begin to gather under the epithelium of the infected furrow. The inflammatory area is wedge shaped, with its apex at the bottom of the furrow and the base at the serosa. This results from the distribution of lymphatics carrying off the infection. The lymphnodes themselves are not affected, at least not in the beginning. Upon the epithelial lining at the bottom of the furrow there collects a plug of leukocytes, fibrin, and bacteria lying mostly intracellularly.

This primary stage is quickly followed by the *phlegmonous* (*catarrhal*), which is nothing more than a confluence of several primary foci. Many cases heal at this period, others go on to the formation of intro-mural abscesses which may rupture into the appendiceal lumen or into the peritoneal cavity, leaving minute miliary openings.

The *ulcerative stage* follows the phlegmonous. This stage is never primary except from direct injury due to foreign body. Ulcers always correspond to the position of furrows and are formed by epithelial necrosis at the primary focus. Fibrinous deposits on these ulcerations may form the so-called diphtheroid membranes. Spreading of the primary focus with deep necrosis may lead to perforation. This, however, differs from the miliary perforations of the phlegmonous stage. Since most mucous folds and furrows are on the side opposite the mesenterial attachment, most perforations break through on that side. Possibly Kelly's observation that the blood supply is poorer on that side is of added explanatory value.

Intestinal saprophytes are the cause of *gangrene* of the necrosed areas.

The location of the inflammation, aside from the furrows of the mucous membrane, may also be determined by a more or less sharp kink in the appendix. This favors stagnation. Very often, too, as was pointed out above, there is at such a bend a one-sided development of the musculature, which makes emptying difficult. The fact that in such cases the proximal portion of the appendix is normal proves that the inflammation does not extend from the cæcum, as is believed by some.

Fæces and fæcal concretions are harmless contents of the appendix; they do not exert pressure, and their bacterial population causes no trouble. On the contrary, such concretions may localize an infection that otherwise could have spread, and they may even protect the mucosa. Only after infection has taken place may these concretions become dangerous.

Mild early cases may heal in a few days, and such cases are probably rather common. Healing results in scar formation more or less pronounced; after the simple phlegmonous type there is merely fibrous overgrowth of the normal connective tissue, so that intramuscular septa become more prominent and cause segmentation of the muscle; the mucosa is thickened. In the severer forms scars are correspondingly greater, sometimes even causing obliteration.

Fæcal concretions and stenoses delay the process of healing, and each subsequent attack of appendicitis heals more slowly than the previous one, because the perilymphvascular fibrosis does not allow ready absorption of infective material.

Rosenow's recent work upon the selective localization of streptococci would seem to indicate that the hæmatogenous portal of entry of appendiceal infection may not be infrequent. Aschoff, however, thinks that the infection is probably always enterogenous and not hæmatogenous, because at first there is simply mucous membrane involvement. In spite of this enterogenous origin appendicitis is not usually preceded by other enteric inflammation and is only exceptionally a result of this.

Infants are less susceptible to appendicitis because their appendical mucous membrane is less folded, and being smoother it affords less opportunity for infection to obtain a footing.

Aschoff holds that more than half of all people sixty to seventy years old have had appendicitis at least once, that most appendicitides heal spontaneously and that non-surgical treatment may be summed up in one word—rest. He believes that opium is much better than castor oil, because the former induces rest, the latter causes disturbance; that so many cases

get well in spite of castor oil demonstrates the healing power of nature. The appendix is probably not emptied by castor oil.

Surgery, although it may not lower the death rate from appendicitis very much, is prophylactically important in bringing about rapid and thorough healing, whereas with internal medication and rest convalescence is often protracted, and the danger of recurrence is always present, especially if kinks, scars, stenoses, etc., remain from a previous attack.

Nevertheless, the medical profession is retreating somewhat from the position at one time generally taken and still held by some of its members, namely, that a diagnosis of appendicitis is equivalent to decision for operative interference. At present most internists feel that expectant treatment, consisting chiefly of rest, is indicated in selected cases.

One of the most important means of culling these cases is a comprehensive blood examination, comprising not merely a total white count but particularly a determination of the neutrophil percentage, and of the number of youthful neutrophilic leukocytes. Such an examination is often a better guide than the temperature curve or other clinical signs. Thus, a case presenting few alarming symptoms but showing a neutrophil percentage proportionately higher than the total leukocyte increase and a large number of immature neutrophilic cells in the blood ought to be operated upon, whereas another case, seemingly very ill, but whose leukocytic blood picture is well balanced, will probably make a good non-operative recovery.

The symptomatology, prognosis and other clinical aspects of appendicitis are not within the scope of this article; but I want to add a few words about prophylaxis. In view of the uselessness and vestigial nature of the vermiform appendix, as amply shown by a study of comparative anatomy, and in view of its susceptibility to inflammation and of its importance as a cause of human morbidity and mortality, it would seem, *ipsis factis*, that prophylactic appendectomy might be a reasonable measure. Even now most surgeons habitually amputate quite normal appendices while performing cœliotomies for other reasons. I would suggest going a step further and would make the removal of the appendix a routine procedure, just as anti-variola vaccination is a routine prophylactic measure.

Childhood would unquestionably be the proper age for performing this preventive operation. Careful consideration of the dangers of such an operation as compared with the liability to disability and even death from a diseased appendix will, I am convinced, be favorable to the former. The operation would be performed at a time when the individual is in perfect health, reducing risk to a minimum, anæsthesia would be very short and

only very rarely the cause of trouble; the danger from adhesions, which may result from any laparotomy, must not, however, be overlooked, but handling of intestines during appendicectomy is not excessive, and adhesions should, therefore, be few and usually unimportant.

Of course, many individuals go through life without the slightest appendiceal disturbance, and there is always the possibility that some of these would have some trouble, either immediate or remote, slight or serious, from the prophylactic operation; but I believe that the sum total of such suffering would be infinitely less than that caused at present by appendicitis. It may seem brutal to impose suffering, however slight, upon a few in order that many may be free, but subordination of the individual for the common good is the order of the day, and why should we not apply this principle to things medical?

THE TREATMENT OF GONORRHŒA*

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The question of the treatment of gonorrhœa may appear at first sight to be a hackneyed subject. But the very fact of its being still under discussion indicates that the last word has not yet been said, nor a certain and rapid method of cure found. Just at present attention is more sharply focused on the matter because of the large numbers of troops, both military and naval, in our midst, of whom about one in every five men have a venereal disease. For this reason alone the treatment of gonorrhœa assumes an importance of the first magnitude.

What I shall have to say probably contains nothing new or original. It is merely an exposition of the results of 12 years' experience in the urological clinic at the Massachusetts General Hospital, and a description of those details of treatment which have been successful in my hands.

Anterior gonococcal urethritis is the simplest and also the rarest manifestation of the disease in the adult male. While I have no accurate figures to prove my point, I believe it no exaggeration to state that the infection confines itself to the anterior urethra in only about 10 per cent. of all cases. In the other 90 per cent. the posterior urethra and prostate become invaded before relief is sought, or during the course of treatment. For, while I believe that bad treatment or neglect may

* Presented before the Boston District of the M. H. M. S., Dec. 6, 1917.

influence the march of the gonococcus to deeper structures, I also believe that this catastrophe may occur in spite of the utmost care. In other words, I do not think it is so much a question of pushing the infection backwards by frequent and improper injections, as it is of a progression to the deeper structures by way of natural routes, chiefly the lymphatics.

To be successful, the treatment must depend upon an accurate diagnosis. When, then, a patient presents himself with a urethritis, it is important to determine several things. In the first place, is it the first attack? If a previous infection, even several years back, is acknowledged, bear in mind the possibility that the present trouble is but an exacerbation of an uncured process now fanned into flame by favoring circumstances. If no such infection is acknowledged, accept the statement at its face value, all the while remembering that one of the symptoms of gonorrhœa is a faulty memory and a disregard for truth. You examine the penis and find the usual conditions, a red, more or less puffy meatus, and a muco-purulent or frankly purulent discharge. After taking a smear for microscopic examination, the patient urinates an inch or two in one glass and the rest of it in another. The first urine is more or less cloudy, the second clear and sparkling. The probable diagnosis is anterior urethritis. I say probable, because it is not very uncommon to see an exacerbation of a prostatitis of long standing and presumably cured, flare up in just this way and produce this picture. A safer way, especially if one has reason to suspect an older infection, is gently to irrigate the urethra down to the cut-off muscle before the patient urinates. If the urine then passed is clear and without shreds, coming, as it has, through a clean anterior urethra, a posterior infection can safely be excluded. If, however, the urine is hazy or contains shreds, the supposedly simple anterior urethritis resolves itself into the treatment of a prostatitis. In other words, the time-honored two-glass test is fallacious unless correctly applied. If instead of being clear, the second urine, like the first, is hazy and contains shreds, the test is then of value and indicates a posterior lesion.

Another point to be borne in mind is the possibility of a latent stricture, a lesion which may exist for years without the patient's knowledge. It must not be forgotten that behind this stricture, there is a more or less extensive urethritis and prostatitis, which, when stirred up by certain conditions, may call attention, not to themselves, but to the anterior urethra. A cautious exploration of the anterior urethra with the flexible *bougie-a-boule*, the "blind man's cane of the urethra" as Guyon used to say, will demonstrate the presence of a stricture. Again,

one must not overlook those not infrequent congenital malformations of the meatus in the shape of a tiny blind passage, generally dorsal to the urethra which, being histologically identical with the urethra, may also present the same pathological conditions. These pockets are generally mere dimples lined with mucosa, but occasionally will admit a filiform bougie for perhaps half an inch. Their cure depends upon their complete removal, a matter of easy accomplishment with a little novocain. It is well, also, carefully to palpate the entire pendulous urethra for the detection of infected follicles, which, while they may be only of pinhead size and without symptoms, are sufficient to prolong a urethritis unduly. Their favorite situation is on either side of the frenum or at the peno-scrotal angle. These remarks may seem to be an unnecessary digression, but experience has shown that these are matters of real importance in the success of treatment.

If, after careful examination, it is found that there really exists a simple and uncomplicated anterior urethritis (and these remarks are applicable to all types of gonococcal infection), the patient is urged to coöperate in the treatment, for I firmly believe that without this coöperation the best of treatment is useless or of little value. He must absolutely eliminate all sexual excitement (quite as much that which is ungratified as that which accomplishes its desires), together with alcohol in all forms. The prohibited drinks also should include ginger ale, tonics, soda and all charged waters. As regards food, I think the harmful things are spices, and all kinds of seasoning. The only efficient internal medication I believe to be sandalwood oil in ten-minim capsules, thrice daily after meals, or if not well borne, as it occasionally is not, twice daily, or even in five-minim doses if the larger amount cannot be tolerated. Potassium citrate is of some value, but no more so than very large amounts of water and milk.

Irrigations should be begun at once and given daily if possible, or as often as circumstances will permit. At the hospital and in private practice I much prefer to use a small (No. 15 French) soft rubber catheter and a syringe of from 100 to 200 cc. capacity. The catheter, well lubricated, is gently inserted about half-way down the urethra and the canal irrigated back to the cut-off muscle by gently and alternately compressing and releasing the thumb and forefinger at the meatus. The irrigating fluid should be as warm as can be borne and at least a pint is to be used. I have found permanganate of potash the most efficient drug and if used in the proportion of 1:400 it does not irritate appreciably. A one-grain tablet crushed up in one pint of water makes a solution of this strength, fresh for

every occasion. As the patient is often ignorant of the technic of injections which he is to use at home, I go into the details by actual demonstration. I consider this to be important, for otherwise the patient may perfectly well either derive no benefit from this measure or do himself harm by undue violence. While argyrol (10 per cent.) is clinically the most satisfactory injection, its use has certain disadvantages. It is not only very expensive (now almost prohibitive) but also stains so badly that the patient is often unable to conceal from his friends or family his therapeutic attempts and the occasion therefor. Protargol in 0.5 per cent. or 1 per cent. strength seems to be quite as efficacious, on the whole no more irritating, less expensive and does not stain. These injections should be done "as often as possible," which for the average man means 3 or 4 times a day. Should urination be a source of discomfort, much relief can be obtained by frequent, long and hot *Sitz* baths.

If the process remains in the anterior urethra a cure is to be expected in a month or six weeks. The irrigations are continued to the very end, but as soon as the discharge has ceased, or when there is only a slight gluing of the meatus in the morning, I discontinue the injections and the sandalwood oil. It seems to me that these remedies are then of no value. I find no appreciable benefit is derived from any of the thousand-and-one astringent injections which have been devised in ages past. The permanganate of potassium is not only an antiseptic but has well marked astringent properties.

But after the most careful application of the measures just outlined and in spite of the patient's hearty coöperation, the posterior urethra and prostate become involved in a very large number of cases, generally within the first week after onset of symptoms, more rarely at a later date. The prognosis becomes at once less favorable, for not only is the prospect of cure postponed from four to six weeks to at least as many months, but also the possibilities of complications such as epididymitis, arthritis and prostatic abscess begin to rear their heads. During the earlier stages of the invasion of the posterior urethra I am apt to continue the treatment already outlined without much change. The exact moment when one should begin to irrigate the posterior urethra is still *sub judice*; equally unsettled is the time for commencing prostatic massage. My own practice is to begin these processes almost at once unless an unusually copious discharge or marked frequency and tenesmus make it appear that discretion is the better part of valor. One must remember that he is dealing with an acutely and extensively inflamed mucous membrane, and while it is undoubtedly desirable to remove the infection, it must not be forgotten that in so doing

the catheter and the irrigating fluid may aggravate an already bad situation. I find that it is not generally recognized that posterior urethritis means prostatitis; on the other hand one not infrequently sees the latter with little or no accompanying involvement of the posterior urethra. It is hard to believe, however, that the gonococcus, in its march along the posterior urethra, can by any possibility avoid gaining access to the prostate through the ducts of the latter which open into the urethra. This being the case, prostatic lesions are certain and early, and a stimulation of its blood supply by gentle and not too frequent massage seems to me to be a common-sense procedure. At any rate, I have not had occasion to believe that such a procedure was harmful; *per contra*, I am sure that it has served to shorten appreciably an otherwise long-drawn-out convalescence. It is certain, however, that when the discharge begins to abate and when the bladder irritability of the first few days is lessened, and when, also, the urine in the second glass is less turbid, the attack upon posterior urethra and prostate can be made with impunity. After inserting the catheter an inch or two into the urethra and rinsing out the canal to the cut-off muscle, the catheter is then gently inserted through this sphincter while fluid is being forced from the syringe. The catheter is thus floated through, like a barge in a canal lock, and little or no discomfort is experienced by the patient. If, on the other hand, irrigation of the anterior portion of the canal is persisted in for too long a time, the cut-off muscle is irritated, closes down like a clam-shell and may resist even prolonged effort to pass it.

It may not be out of place to speak a word of caution as to the dangers of forcibly overcoming the resistance of a contracted cut-off muscle. If this be done with a stream of anti-septic solution, either from the gravity-apparatus and a large glass irrigating nozzle, or from a catheter and the hand syringe, there is almost a certainty of causing severe pain, and a possibility of setting up free bleeding. I have seen a hæmorrhage produced in this way last for two or three days, and firmly believe that such an occurrence or the production of pain is undesirable. If, then, the catheter or the stream from it does not easily pass the cut-off muscle further attempts should be given up for that occasion.

After entering the bladder, one or two hundred cc. of fluid are then injected, the catheter is then withdrawn until its eye rests within the prostatic urethra and irrigation of the prostatic and bulbous portions of the urethra is continued until the desired quantity of the solution is used up. The patient is now ready for massage of the prostate. On the first occasion this

procedure should be done with the utmost caution, and should be regarded more as an exploring expedition than a massage. The condition of the prostate, vesicles and bladder floor as regards tenderness, induration, nodularity and size is ascertained; possibly no changes demonstrable to the examining finger may be noted, for it may be too early as yet for these to have occurred. Massage should be of the mildest sort, for one never can tell when he may "kick a hornet's nest," and aggravate an already bad condition. Likewise, a vigorous massage on the first visit is not calculated to gain a patient's confidence or to make him believe that his only hope lies there. It is my opinion that while irrigations may be given daily, massage should be done not more than two or three times a week. Even then, the results should be watched carefully and if there is evidence that the symptoms are growing worse, omission of the massage for a few days is distinctly indicated. After massage the patient is instructed to pass out into one or two glasses the fluid already introduced into his bladder. This fluid may be simply turbid or it may contain more or less detritus, together with a few masses of inspissated semen from the seminal vesicles. While cases are often seen where the amount to be obtained after massage is almost microscopic in quantity, it is far more common to find amounts of secretion which are startling, not only in size, but also in persistency. This is particularly true of those cases which are seen after prostatitis has become well established, and in whom the treatment has been inadequate or entirely neglected.

In answering a patient's inquiry as to the nature of the prostate, I describe it as a gland about the size of an English walnut, built like an ordinary sponge, and surrounding the neck of the bladder in the same way that a spool surrounds the hole that runs through it. This seems to make it clear to them why mechanical massage of the prostate by squeezing it between the finger and the pubic bone is so beneficial, and they understand that the comparison between freeing a prostate of pathologic products and cleaning a new sponge by a series of washings and squeezings is not at all far-fetched.

When the urethritis has largely subsided irrigations may be omitted if desired, for I firmly believe that the surgeon's index finger is then the only implement of value. It is important, however, not to massage the prostate on an empty bladder. If no irrigation is to be done enough urine should be left in the bladder to enable the patient to void after the massage. Otherwise the prostatic secretion stays in the bladder until the patient urinates again, a matter of perhaps two or three hours. This may give rise to a certain amount of irrita-

tion, to say nothing of the possibility of reinfection. Another advantage of having the patient pass out the products of massage before leaving the office is that the progress of the case can be followed by noting the amount and character of the detritus. While cure can be accomplished by the method outlined, always counting, however, upon the patient's co-operation, certain other procedures are sometimes of value. Although permanganate of potash is the drug upon which I place most reliance, I have also found that nitrate of silver is of great value. If progress is slow, especially as regards the urethritis, I begin by adding a little silver nitrate to the potassium solution. I have the former mixed in a solution of 7.5 grains to a drachm of distilled water, so that a drachm of this added to a pint of water makes a 1:1000 solution. There being 60 minims to a drachm, one-tenth of this amount, or 6 drops added to a pint of potassium permanganate makes a 1:10000 solution of silver nitrate. The strength can be readily altered to suit each case, for it will be found that certain individuals are more susceptible than others to this drug and its introduction to the urethra must be made by exceedingly slow steps. In some cases I use only the silver salt, omitting the permanganate entirely. In any event, a combination or alternation of these drugs seems to work better than either one alone. It may also be remarked in passing that the cases wherein deep instillation of a very strong (1 or 2 per cent.) solution of nitrate of silver is of value are exceedingly few, and for all practical purposes cannot be counted upon to help. As regards the passage of sounds, I find that in stubborn cases, where the urethritis persists unduly long, the occasional and gentle passage of a medium-sized sound (24 or 26 F.) is a distinct help. While the reason for this is not entirely clear it probably depends upon the fact that the glands of Littre, which line the pendulous urethra, are gently massaged, and a similar effect is produced upon the verumontanum. I have found the endoscope to be of little value except in certain cases where it may be helpful for purely psychic reasons. The possibility of treating, or even seeing, infected follicles is so remote as to be negligible.

The treatment just described applies only to cases wherein there is no complication such as folliculitis, peri-urethral abscess, stricture, epididymitis or prostatic abscess. By its intelligent and persistent application a cure can be practically guaranteed in the anterior cases in from four to six weeks, in the posterior cases in about as many months. The latter are, however, highly uncertain as regards duration, and he is an unwise or an inexperienced surgeon who will commit himself to any definite time limit.

It may now be worth while to discuss the question of cure. How are we to determine this important point? Surely no one can deny that it places a very grave responsibility upon the surgeon when the patient says, "Doctor, I am to be married next month, is it safe for me to do so?" If your answer is "Yes," you begin to wonder if, after all, there may be some latent focus which you have overlooked. If you pronounce an unfavorable verdict you feel that perhaps you are unnecessarily making for the fellow (to say nothing of the girl) domestic complications of the most serious nature. But today the cry is "Safety first," and my feeling is that when there is the least doubt the game should be played safe.

After a certain amount of treatment the discharge disappears entirely, the shreds are no longer seen (although flakes of mucus may persist indefinitely) and no detritus is obtained from the prostate after massage. This would appear to indicate a cure, but it is far better to keep the patient under observation for some time after getting these negative results until it is certain beyond a doubt that they are permanent. The standard of cure which we have adopted at our clinic at the Massachusetts General Hospital, and to which we have adhered for some years, is as follows:

1. Absence of gonococci from all secretions after repeated search.
2. Gonococcus complement-fixation test negative.
3. Clear urine and no pus in the secretion of prostate or vesicles after at least three examinations at intervals of a fortnight.

Occasionally, however, we accept a weakly positive blood test and negative clinical findings; and at times we let pass a little pus in the secretions provided the blood is negative. In other words, the question is one of surgical judgment based on large experience to a considerable degree. I feel sure, however, that if one adheres to the above schedule he cannot go wrong. After these conditions have been satisfied I feel that the patient is really cured and free to marry if he is so inclined.

COMPLICATIONS

Were I now to go into all the complications of gonorrhœa and their treatment, this paper would far outrun the limits of your hospitality. Perhaps, however, I can touch upon a few of the more important points without consuming too much of your time or patience.

Folliculitis is rarely seen with an anterior urethritis. It is an important complication, for it is to be regarded as the keel of

a future stricture. The follicles on either side of the frænum are very frequently infected, abscesses form, rupture, and establish a little sinus. This leaks a few drops of pus, occasionally urine, and may reinfect an otherwise clean urethra. The sinuses have periods of activity, alternating with times of quiescence. Excision is the only means of cure. This involves a very slight operation, easily done under local anæsthesia, but unless the entire follicle and its sinus are removed, and unless the subcutaneous tissues are properly sutured there will be a recurrence of the sinus from reinfection of a neighboring follicle, or a tiny urinary fistula will be established. Infection of the follicles more posteriorly will result in one of two things, either they will subside spontaneously with frequent hot irrigations, and hot soaks, or they will go on to abscess formation. While in the former event a future stricture is not so likely to occur, such a misfortune is undoubtedly certain in the latter case. If an abscess forms it will either rupture spontaneously, or its incision and drainage will be a wise procedure. In either event there is a possibility of a urinary fistula whose closure may tax the surgeon's skill and ingenuity to the utmost.

It has already been pointed out that strictures of the urethra have their origin in peri-urethral abscess arising in its turn from folliculitis. I do not think it is generally appreciated that anywhere from three to five years must elapse before this stricture is clinically demonstrable. When, therefore, a patient with an acute urethritis, and with a stricture, tells you that it is the first attack, you may be sure that he has the faulty memory so often seen in these individuals. The contraction of scar tissue is very slow, the ability of the bladder to overcome mechanical obstruction to the outflow of urine is very great, and between the two, patients do not realize that anything is wrong until a very considerable degree of contraction has occurred. It is not uncommon, as you all know, to find, quite by accident, a stricture which will admit only the smallest bougie, and of which the patient was wholly unaware.

Oftentimes a stricture will call attention to itself only by a persistent and profuse urethral discharge. It must not be forgotten that behind a stricture the urethra and prostate are in a state of more or less active infection and that under favorable conditions this infection is likely to assume marked activity. Hence it follows that the treatment of stricture involves not only the restoration of the urethra to its normal size, either by dilatation or operation, but also eradication of the infection behind it by irrigations and massage. Another point not sufficiently realized by patients, and, I am sorry to say, often not by physicians as well, is that strictures cannot be cured.

They can be restored to a normal size by one means or another but contraction again takes place, so that left to themselves and given sufficient time, the conditions will be the same as before, if not worse. He who has a stricture must have it dilated occasionally as long as he lives.

Whenever a patient develops epididymitis it is certain that he has a prostatitis, for this unfortunate complication never occurs with a simple urethritis. Many text-books refer to the condition as "orchitis," but a now considerable operative investigation of these cases has shown that the testicle itself is never affected. The lower pole of the epididymis is first attacked, and later the infection may spread to the body and upper pole as well. The vas is not infrequently thickened to a marked degree and may, like the epididymis, be not only painful, but tender, especially in the inguinal canal.

Epididymitis is not only a source of much pain and discomfort, requiring several days of more or less invalidism, but, what is more important, it is extremely liable to lead to sterility. Statistics gathered from various sources have shown that where only one side was involved sterility followed in about 25 per cent., whereas in a bilateral infection the percentage jumped to at least 75. Hence it follows that one must not only do his best to obviate this complication, but also to lessen the chances of a subsequent sterility. The latter is due to the fact that the inflammatory process obliterates the lumen of the vas or of the tubules of the epididymis. The quicker and the more completely the products of inflammation are removed, the better are the patient's chances of a recovery without sterility.

Local applications, such as silver nitrate, ichthyol, guaiac, iodin, *etc.*, are of little or no value. Poultices and ice-bags are generally of little value, except to lull both patient and physician into a sense of false security by their anæsthetic properties, and whatever improvement takes place is due quite as much to the rest in bed required for this treatment as to the treatment itself. Even if the process does quiet down it may indulge in a vicious exacerbation just when the patient thinks he is out of the woods. My belief is that the only expectant treatment worth while is the application of a snug-fitting piece of thin rubber dam around the entire scrotum, held in place above and below by narrow strips of adhesive plaster. The technic of applying this rubber dam is simple when once acquired, but is a little difficult at first. Its effect is startling in most instances. I have seen many a patient in such pain that he could scarcely walk relieved so completely and instantly by this bandage that he was able to resume his work the same day. In other instances its effect is less striking, but in all,

except the most acute cases, the relief of pain and the decrease of tenderness, swelling and induration is accomplished within twenty-four hours. The bandage may then be removed and a tight-fitting suspensory applied, or the safer course may be pursued of keeping it on for another day. After from forty-eight to seventy-two hours of this treatment the epididymis is practically without subjective symptoms. As I have already pointed out, however, exacerbation is not uncommon with expectant treatment, and it is my belief that all except the mildest cases had better be opened and drained. The patient can be assured, not only that recurrence will not take place, but also that his chances of sterility are greatly reduced. It is entirely reasonable to suppose that the evacuation of pus and subsequent drainage will result in less scar tissue and hence less tubule obliteration than with expectant treatment. Operation may be done in out-patient or office under local (novocain) or nitrous oxid anæsthesia. In this event a knife is plunged into the lower pole of the epididymis, at the point of greatest induration and swelling. Occasionally a little pus is obtained; more often only considerable bleeding occurs. In either case a small piece of rubber tissue is carried into the sinus thus created and left there for two or three days, the scrotum meantime being enveloped in a sterile dressing. While this simple procedure is often satisfactory, I believe it to be on the whole unsatisfactory and unsafe. One cannot tell just how deep the knife goes, or whether it cuts the vas or some large vein instead of the pus pocket sought for. It is much wiser to propose and perform a more extensive operation under general anæsthesia. The tunica is opened, adhesions broken up, the epididymis punctured in several places and the abscess cavity in the lower pole of the epididymis, between it and the testicle, exposed and curetted. A small rubber tissue drain is left in for two or three days. Pain and tenderness are relieved at once and the patient is up and about on the third or fourth day. The results by this method are so uniformly and impressively satisfactory that I have no question as to its advisability.

Before going on to the next complication I wish to warn against treatment of the urethritis or prostatitis until the epididymitis has practically entirely subsided. While bilateral involvement is very rare, local treatment at this time will certainly tend to produce it.

Another complication, arthritis, is not infrequently met with. Like epididymitis it follows a prostatic infection and may, like the former, make its appearance very soon after the onset of the disease. On the other hand, it is astonishing how long after infection it may occur, a circumstance which points still more

strongly to the stubborn nature of the disease. In any event, it is characterized by chronicity, by a tendency to recur, and by an idiosyncrasy for certain points not commonly attacked by other types of infection. For example, it may involve the jaw, the vertebræ, or the sternoclavicular joints, together with those of the carpus, tarsus and phalanges, but the large joints may likewise be attacked.

I wish to take this occasion to state that arthritis cannot be cured by vaccins. I have tried all varieties, both autogenous and stock, in hospital and private practice, and have yet to find one which is satisfactory. In a few very acute and painful joints the edge of suffering has undoubtedly been dulled by a vaccin, but these cases have had no shorter road to ultimate cure than others not so treated. In most instances the results of vaccin treatment have been nil and I have given up its use.

As arthritis indicates an infection of deeper structures, namely, prostate and vesicles, these organs must be regarded as the foci of infection and treated accordingly. Massage and irrigation combined are a *sine qua non* and will generally succeed. It occasionally happens that the first few treatments will aggravate the joint lesions to a more or less marked degree. After a day or two of exacerbation an appreciable improvement is noted and this will generally continue until a cure is established. But let me urge strongly that this treatment be pursued relentlessly and regularly until the conditions already enumerated as indicating a cure can be satisfied.

There are, however, many cases where the arthritis is, or becomes, so marked that the orthopædic surgeon must be called to the rescue. Prompt and efficient attention at the right moment may mean a useful limb, whereas, a delay may result in permanent and serious impairment.

Prostatic abscess is not very common. I see perhaps half a dozen a year. When well marked there is no mistaking the condition. In its early stages, or when small and centrally located, diagnosis may be difficult and uncertain. It is safe to say, however, that prostatic abscess is far more common than any of us realize, and it is unfortunate that the splendid work of the late Dr. Samuel Alexander is not more generally known. He showed that the prostate is very frequently the seat of anywhere from one to countless abscesses varying in size from a pinhead to a bean and passing, before operation or autopsy revealed the truth, as chronic prostatitis. These small abscesses are not readily palpated, drain through narrow and tortuous sinuses, and undoubtedly account for the extreme chronicity of many of our cases. Surgery can do little or nothing for these patients, as operation may either reveal no

abscess or wreck a prostate which might be of some value to its owner if left alone. It is in the large abscesses of the prostate that diagnosis is easy and the treatment clearly indicated. Hot urethral irrigations, hot rectal douches, hot *Sitz* baths and rest in bed, together with forced fluids, a milk diet and sandalwood oil may bring out a marked improvement. Urination will be less frequent, less urgent, and less painful, and the stream will come more freely. The sensation of having a "hot baked potato" in the rectum will disappear and coincident with it there may be a marked and sudden increase of the urethral discharge, indicating rupture of the abscess into the urethra. This sequence of events will occur in the majority of cases and is generally to be desired. Watchful waiting is of value but one's surgical instinct must not be dulled. It must be remembered that abscesses of the prostate may and sometimes do rupture into the rectum with the possibility, faint, to be sure, of leaving a recto-vesical fistula. Other cases may rupture subperitoneally and prove fatal owing to the rapid dissemination of infection in the pelvic tissues. It is to obviate just such catastrophes that the surgeon should be on guard. If palliation produces no effect within forty-eight hours the abscess must be opened and drained. Many surgeons still perform the old rectal puncture without untoward results. A far safer procedure is to do a regular external perineal urethrotomy, insert the finger into the prostatic urethra and by side pressure rupture into the abscess cavity. Drainage is then established for a few days by means of a large perineal tube, and after removal of the latter the sinus closes in a short time. It may be wise to caution the patient that for a certain length of time he will have a little incontinence owing to damage to the sphincter muscle by inflammatory processes. I have never seen a case which did not fully recover in a few weeks. This operation does not, however, put an end to the disease. Irrigations and massage may be necessary for some time thereafter.

While I believe that the ordinary chronic prostatitis is accompanied by more or less involvement of the seminal vesicles, I believe that active infection of these organs is comparatively rare. The mild cases resolve themselves more into an obstruction of the mouths of the ejaculatory ducts by the infection of the prostate, than an actual infection of the seminal vesicle. Massage and other measures which are applied to the prostate will suffice for these cases and they will improve coincidentally with the prostate.

In the more serious infections there is actual invasion of the cavity and wall of the vesicle, together with more or less perivesiculitis. While the ordinary palliative measures generally

suffice to relieve these conditions, operative interference may be necessary to cure the more extreme cases. The latter by their chronic anæmia, loss of weight, and general "rundown" condition, sometimes combined with arthritis, show definite evidences of the toxæmia arising from these infectious foci.

The seminal vesicles can be irrigated with antiseptics (argyrol or silver nitrate) by injections of these solutions through the scrotal portion of the vas deferens, and in some cases benefit is obtained by one or two such treatments. As a matter of fact, more injections than this are desirable, but the small size of the vas and the difficulties of injection make it practically impossible.

Incision and drainage of the seminal vesicles or excision is necessary in certain cases, after every other method has proved inadequate. The operation is distinctly in the realm of major surgery and should not be lightly advised. In most its results are strikingly successful; in others the results are less satisfactory. After a considerable pathological study of autopsy specimens and a fairly large operative experience, I wish to emphasize the great importance of ruling out every other possible focus of infection before attributing the trouble to the seminal vesicles.

GONORRHOEA IN WOMEN AND CHILDREN

The cure of this infection in adult women is not yet a matter of speed or certainty. The keynote of the problem is perseverance and attention to detail. Infections of Bartholini's glands can be cured only by extirpation of the glands; no palliative measures will suffice, and a gland once infected is bound to exacerbate intermittently. The same may be said of the Fallopian tubes. Infection of these organs, however, not only recurs, but also exposes the patient to the dangers of an extra-uterine pregnancy. In badly infected cases, with a marked endometritis and endocervicitis, curettage, cauterization, *etc.*, is like sending a boy to do a man's work. Panhysterectomy may be the only means of effecting a cure.

Of the minor ailments Skenitis is perhaps the most annoying. Only careful inspection will reveal the source of the pus, which is stripped from the urethra, and it will often be found that the orifice of Skene's glands lies just within the meatus. In these cases the meatus must be thoroughly cocainized and everted with toothed forceps, thus exposing the gland orifice. This can then be injected with silver nitrate (1 or 2 per cent.) by means of a small Luer syringe armed with a blunt needle. Daily, or frequent, swabbing out of the cervical canal with tincture of iodine, strong silver nitrate, or even crude carbolic

acid, must be carried out, and where these measures do not suffice to cut down the discharge, curettage and cauterization of the cervical canal with the actual cautery should be advised.

As in the case of male patients we have adopted a standard of cure to which the women in our clinic must conform before being considered cured. These requirements are as follows:

1. Negative gonococcus complement-fixation test.
2. Absence of clinical evidence of the lower tract.
3. Negative pelvic examination.

While we do not believe that adult men or women, or little boys, acquire gonorrhœa accidentally, there is no doubt that the infection of little girls takes place in this way. By our careful follow-up system, the source of infection is often traced to an older member of the family. To say that the vulvovaginitis of children is persistent is putting it mildly. In a hasty glance through our records, I find that the child who was cured in the shortest time achieved this result in eight months! Most of the others had dragged on for a year or two. For some months we have been treating these children in the clinic with a small, straight, electrically lighted endoscope, through which the cervix can be seen, and to which applications with tincture of iodine or silver nitrate can be made. While it is too early yet to make any statement as to the real value of this method of treatment, we believe it will hasten results by attacking more directly the focus of infection, namely, the cervix. In addition to this, the child's vagina is injected with 10 per cent. argyrol, and the mother, or guardian, is instructed to give daily douches at home of permanganate of potash. In the carrying out of this, our Social Service workers exercise laudable vigilance.

Before being discharged as cured, each child must conform to the following standard:

1. Absence of gonococcus.
2. Little, or no, pus in vaginal smear.
3. Negative gonococcus complement-fixation test.

While the gonococcus complement-fixation test in these children, and in fact in all cases, is of some value, we are getting to lean less heavily upon it than was formerly the case. It is difficult to get a suitable specimen of blood in a small and squirming child, and we, therefore, omit this part of the régime in many.

Every once in a while we see a little boy or male infant in the clinic with gonococcal urethritis. Whereas these cases were formerly thought to be accidental infections, it is now certain that some older infected person, generally a woman, is responsible for the trouble.

As the infection involves the entire urethra, irrigation of this structure should be done as frequently as possible. As a matter of fact, I have found that daily injections of argyrol (10 per cent.) with an ordinary medicine dropper work well. The cut-off muscle resists but little, and allows the argyrol to run freely to the bladder neck. The disease, as seen in little boys, runs a comparatively short and favorable course, and I have not seen it produce the complications so often seen in the adult.

It will be seen that the subject of the treatment of gonorrhœa covers an immense field, involving men, women and children of both sexes. For this reason, and because of its extraordinarily wide prevalence, to say nothing of its far-reaching and disastrous results, one cannot know its intricacies too thoroughly.

As a final word, which encourages or discourages, according to circumstances, let me state that the best evidence goes to show that the gonococcus will die out spontaneously within a period of three years, or less, from the time of infection, leaving in its wake a trail of wreckage which is sometimes appalling.

EDITORIAL

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DAYLIGHT SAVING

The United States Fuel Administration and its local sub-commissions are taking drastic steps to conserve the nation's coal supply. Earlier closing and later opening hours for stores, wholesale business houses, theatres, *etc.*, and reduction or elimination of unessential industries have been decreed.

Much coal is used in the production of gas and electricity for illumination. With the approach of spring and lengthening days the desirability of setting the clock ahead one or even two hours is again being discussed; a bill to this effect, introduced by Senator Calder and approved by President Wilson, has already passed the United States Senate and is now before the House of Representatives. Other nations have tried daylight saving, and now that we are feeling the pinch of fuel shortage every effort should be made to adopt it in this country.

We believe that the change could not but have a salutary effect upon the health of the nation. "Early to bed and early to rise, makes a man healthy —." Individual improvement in health would probably be imperceptible, but the aggregate increased national vigor ought to be considerable and perhaps demonstrable. Shorter evenings would mean less reading by artificial light and consequently less eye-strain; an added hour of sunlight after a day of labor, school or business would undoubtedly mean more outdoor recreation: baseball, tennis, golf, boating, bathing, fishing, walking, riding, automobiling. That would mean stronger muscles, better digestion, healthier lungs, better elimination, and a more active and alert mind.

Let us utilize to the fullest extent the light that nature has provided, not only to save what we need for winning the war but also to add to our own physical and mental health, comfort and happiness.

CLINICAL DEPARTMENT

Chelidonium in Hypertrophic Cirrhosis of the Liver — a Case Report

Mrs. —, aged 75, was admitted to the Medical Service of the Massachusetts Homœopathic Hospital on Oct. 19, 1917, complaining of jaundice with intense pruritis, constipation with clay-colored stool, and tenderness in the epigastrium, all of one year's duration and without response to previous treatment.

FAMILY HISTORY showed cancer on the father's side and paralysis agitans in one sister; otherwise it was negative.

PREVIOUS HISTORY was negative save for a fracture of the right hip with complete recovery, and slight attacks of "rheumatism."

PRESENT ILLNESS began gradually about one year ago with the appearance of sour stomach, nausea, vomiting, itching and jaundice accompanied by constipation and clay-colored stool. Previous medication had given no relief.

PHYSICAL EXAMINATION showed a remarkably well-preserved old lady with a typical jaundice color and dry skin. Each crystalline lens showed some cataract deterioration; the scleræ were jaundiced. The nasal septum showed a crust-covered erosion; the teeth were missing but the lungs showed no abnormalities. The heart had a systolic murmur at the apex transmitted to the posterior axillary line, soft-blowing in character; at the aortic area was a presystolic murmur, harsh in character, transmitted to the carotids; the aortic second sound was greater in intensity than the pulmonic second sound; the left border of the heart on percussion was 1 cm. outside the left mid-clavicular line. In spite of these physical signs no history of definite dyspnœa or palpitation was obtainable, and the patient had found no difficulty in attending to her routine house work at home. The systolic blood pressure was 130 mm. and the diastolic 70 mm.

The abdomen was level, soft and normally tympanitic. The liver dullness extended from the sixth rib to 5 cm. below the costal border in the right mid-clavicular line; it was palpable and showed a smooth edge with slight tenderness. The spleen and kidneys were not palpable. An x-ray examination of the stomach and intestines showed a moderate gastro-enteroptosis with no other apparent variations from normal; no suggestion of cancer was found.

Ascites, *caput Medusæ*, œdema and hæmorrhoids were absent; bile was found in the urine together with evidences of renal irritation from that source.

After careful consideration the medical staff in attendance

could arrive at no other diagnosis than idiopathic hypertrophic cirrhosis of the liver.

The patient was put on a diet selected with the view of reducing foods requiring bile salts in their digestion. At the same time *chelidonium* 3x was given in the form of two triturated tablets every two hours. A study of the pathogenesis and symptomatology of *chelidonium* showed that both nausea and vomiting were frequently reported by provers. There are also many symptoms pointing to its action upon the liver, although jaundice is not reported. Diarrhœa was produced more frequently than constipation.

In one week's time the itching had decreased and the jaundice faded slightly; ten days more showed a marked increase in the strength of the patient and less itching, which was now most troublesome at night; the jaundice had faded greatly, remaining most prominent in the scleræ, while the dryness of the skin had disappeared entirely. In three weeks the liver dulness seemed to be decreasing in extent, as determined by percussion and digital palpation. In less than a month after admission the patient was discharged as recovered: the stools were normal in color, the jaundice had entirely disappeared and the liver so diminished in size that it was no longer palpable, and its area of dulness extended only from the sixth rib to the costal border.

The interesting points of the case are its long duration, previous treatment without improvement, and rapid improvement under *chelidonium*.

Conditions causing jaundice usually relate to disturbed or perverted bile elimination. In this case no history of hepatic colic was obtainable, no tender gall-bladder was palpable and, although clay colored stools, jaundice and vomiting existed, there appeared no definite evidence that a calculus or even cholangitis was the cause of the patient's condition. Pre-atrophic cirrhotic hypertrophy of the liver in patients with an alcoholic history is not uncommon as a cause of stagnation of the portal circulation with œdema, ascites, hæmorrhoids, *caput Medusæ* and with toxic symptoms from bile absorption — this picture was incomplete. Syphilis or cancer of the liver may result in analogous symptom groups, but the Wassermann reaction in this case was negative, the blood pressure was not high, no venereal history was obtainable, and the liver border, easily palpable, showed a smooth and even contour; the blood examination showed no cancerous secondary anæmia, cachexia was not present and the loss in weight and strength not marked; no masses were palpable. In certain geographic locations hydatid and echinococcus cysts may involve the liver, which may

grow to enormous size; no suggestive history of such a cyst was obtained, and no fluctuating mass was felt in an abdomen well suited for palpation. Adhesion formation and pancreatitis may be indirect causes of jaundice and its allied symptoms, but no previous abdominal illness had been experienced. Hæmolytic jaundice was excluded by careful blood examination which showed normal hæmoglobin percentage, normal erythrocyte count and very slight leukocytosis with lymphocytes and polymorphonuclear neutrophils in well balanced percentages.

These various ætiologic factors apparently were not operative in this case; so that hypertrophic cirrhosis of the liver was the diagnosis arrived at by exclusion.

Although one case proves very little, yet the immediate improvement following the administration of chelidonium, particularly in view of the failure of previous therapeutic attempts, may well be looked upon as evidence of its remedial value in this case. (Reported by H. L. Leland, M.D., from the Medical Service of the Massachusetts Homœopathic Hospital.)

HOMŒOPATHIC PERIODICAL LITERATURE

Pacific Coast Journal of Homœopathy. December, 1917

1. *Anæsthesia in labor.* 563. Ward, F. N.

One hundred obstetric cases are reviewed and grouped as follows:

Without anæsthesia,	13
Chloroform,	22
Nitrous oxid,	17
Morphin-scopolamin,	36
Cæsarian sections with ether or nitrous oxid,	12

—
100

Until recently 1/6 or 1/4 grain morphin and 1/150 grain atropin were given the patient prior to ether anæsthesia for Cæsarian section, and it was noticed that the *neonati* in these were slow to cry and rather sluggish. After the practice of giving morphin had been abandoned there was a decided change in the babies' actions, and the cries became quick and vigorous.

Nitrous oxid 80 per cent. and oxygen 20 per cent. given with the Heidbrink apparatus was found to act highly satisfactorily in certain cases; there were no deleterious effects upon the child or appreciable retardation of labor. Its special sphere lies in controlling the second stage, especially in rapid labors to ease the suffering from expulsive pains.

In the morphin-scopolamin group there were no fatalities, maternal or foetal, but there were two cases of foetal oligopnœa.

"The most striking thing about these [cases] is the well-being of the mother. . . . So noticeable is this fact that on going into an obstetrical ward containing puerperal patients it would be easy to select those who have had the morphin-scopolamin amnesia. . . . They make much more rapid recoveries. . . ."

In summarizing W. states that nitrous oxid-oxygen anæsthesia is of the greatest value for the second stage of labor, as it does not retard expulsion and yet gives desired relief from pain. It is especially useful in multiparæ after dilatation of cervix. It is without deleterious effect upon the fœtus.

Ether is to be chosen for deep narcosis for major surgical work.

Morphin-scopolamin is indicated in primiparæ, particularly to relieve suffering attendant upon slow dilatation.

2. *Tuberculosis*, — physical diagnosis and treatment. 569. White, G. S.

3. *Tuberculosis*. 581. Dickson, C. B.

4. *Tuberculin treatment of pulmonary tuberculosis*. 584. Anderson, A. H.

5. [*Tuberculin*]. 589. Klotz, W.

6. *X-ray electricity in the treatment of pulmonary tuberculosis*. 589. Low, T. C.

7. *What is new in drug therapy?* 593. Hill, S. A.

8. *Symptomatic cures observed in Dr. James Ward's surgical and medical clinic*. 599. Hurd, L. B.

Tijdschrift van de "Vereeniging van Homœopathische Geneesheeren in Nederland." October, 1917

9. *Anaphylaxie*. 97. Voorhoeve, J. N.

Serum sickness is a form of anaphylactic reaction. To avoid serum reactions, in treating diphtheria for instance, the following points should be remembered:

1. Serum of high antitoxin content should be used, for that requires a minimum amount of serum.

2. Old serum gives fewer reactions than fresh.

3. Sera from one type of animals (sheep) should be used for prophylactic injections, and from another type (horse) for treatment, thus obviating anaphylactic reactions due to previous injections of homologous serum.

4. A small preliminary injection, which combines with most of the antibody but does not produce anaphylaxis, may be followed safely by a large injection.

V. points out the relation of immunologic problems to homœopathic ones, and mentions Hooker, Watters and Burrett, Wesselhoëft, Wheeler and Mellon as having used immunologic technic in the study of homœopathic problems.

Revista de Homeopatia Practica (Barcelona). January, 1917

10. *A nustos lectores.* (To our readers.) 1. Savall, J. S.

11. *Dosis.* 2. Olivé, A.

The importance of the minimum dose is emphasized, and points against large doses are considered.

12. *Dyspepsias.* 6. Furest, M.

F. writes of various types of dyspepsia and the remedies useful in their treatment.

13. *Efectos de los sueros anti-diftericos administrados por la via gastrica.* (Effects of anti-diphtheria sera administered orally.) 12.

This is one of the unfortunately rather frequent case reports upon which the reporters base untenable contentions.. In this instance crass ignorance of the fundamentals of serum therapy is conspicuously displayed. It is stated that a patient was cured of diphtheria by the fractional oral administration of 10 cc. antitoxic serum.

14. *Absceso de la mama* (Mammary abscess.) 18. Chiron.

The usefulness of drugs given for their homœopathic action is considered.

15. *Iritis.* 24. Vinyals, A.

The following drugs are considered: *aconitum, apis mellifica, asafetida, aurum, belladonna, bryonia, clematis, euphrasia, gelsemium, hepar, kali bichromicum, kali hydriodicum, mercurius corrosivus, rhus toxicodendron, sulphur, thuja.*

February, 1917

16. *Comparaciones entre belladonna, nux vomica y stramonium.* (Comparison between belladonna, nux vomica and stramonium.) 35. Olivé.

17. *Pneumonias latentes.* (Latent pneumonia.) 39. Savall, G.

Three cases are reported. They suffered considerable unilateral thoracic pains, but failed to reveal stethoscope signs of pneumonia. Aconite 3x and bryonia 2x and bryonia and phosphorus were found very useful in these cases.

18. *Gastralgias.* 45. Furest, M.

19. *Neumatosis digestivas.* (Digestion pneumatosis.) 47. Furest, M.

20. *Rumex patientia.* 56. Casanovas, F.

C. reports a case of severe diarrhœa with tenesmus and a sense of rectal obstruction, griping pains with evening aggravations. The tongue was dry and smooth, and there was much thirst. Several remedies were tried, and the case finally recovered following the administrations of rumex patientia 3x.

March, 1917

21. *Ataxia locomotriz (un caso curado)*. (A cured case of locomotor ataxia.) 65. Moragas, M.
22. *Paralisis infantil*. 84. Fargas, C.
23. *Ledum en la intoxicacion por picaduras de cienpies*. (Ledum for effects of scorpion bites.) 89. Meseguer, A.
24. *Enteralgias*. 90. Furest, M.

April, 1917

25. *Equisetum hyemale en la incontinencia de orina*. (Equisetum hyemale in urinary incontinence.) 105. Olivé.
26. *Agravaciones medicinales*. (Medicinal aggravations.) 109. Sanchez, M.
27. *Ascitis en el curso de una tifoidea*. (Ascites in typhoid.) 111. Verges.

Ascites developed in an eight-year-old child sick with typhoid fever for seventeen days. Physical examination showed a very large and tender abdomen, hepatic hypertrophy, prominent umbilicus and definite fluid waves; the tongue was dry and dark, the urine scanty and turbid, the temperature 40 degrees, the pulse rate 160.

Apis and bryonia in alternation were prescribed, the former indicated by the scanty urine and presence of œdema in various portions of the body, the latter because of its proclivity for serous membranes. At first gradual and then rapid improvement followed; in one month the patient was well.

28. *Tratamiento del asma*. (Treatment of asthma.) 118. Jousset, P.

BOOK REVIEW

Neurosyphilis. Modern systematic diagnosis and treatment. Presented in one hundred and thirty-seven case histories. By E. E. Southard, M.D., Sc.D., Bullard Professor of Neuropathology, Harvard Medical School; Director Psychopathic Department, Boston State Hospital, *etc.*; and H. C. Solomon, M.D., Instructor in Neuropathology and Psychiatry, Harvard Medical School; Acting Chief-of-Staff, Psychopathic Department, Boston State Hospital, *etc.* With an introduction by James Jackson Putnam, M.D. Octavo, 500 pages, with 25 full-page illustrations, \$5.00. W. M. Leonard, Boston. 1917.

In the preface it is stated that this book is written primarily for the general practitioner and secondarily for the syphilographer, the neurologist and the psychiatrist. This precept seems to have been followed throughout. Much space is devoted to differential diagnosis in a chapter on "Puzzles and Errors"; other chapters treat of the medicolegal and social aspects of the neurosyphilitic problem; of neurosyphilis and the war; of the nature and forms of neurosyphilis; of the diagnosis of neurosyphilis, and of its treatment. The book is one of a case history series of which Cabot's "Case Histories in Medicine" is perhaps best known.

An appended summary of the cases discussed is valuable, and in two appendices technical details of various laboratory tests used in diagnosing syphilis are discussed, and intensive treatment is outlined.

Diseases of Women. By Harry Sturgeon Crossen, M.D., F.A.C.S., Associate in Gynæcology, Washington University Medical School, and Associate Gynæcologist to the Barnes Hospital; Gynæcologist to St. Luke's Hospital, etc. Fourth ed. Pp. 1160; with 800 engravings. C. V. Mosby Co., St. Louis. 1917.

Since the appearance in 1907 of the first edition of this commendable and well-received treatise, its scope has been enlarged *pari passu* with the growth of knowledge in gynæcology and in other fields which afford practical applications in diagnosis and treatment.

Special consideration is given to the exact determination of conditions found in the pelvis and to a clear understanding of indications for the particular treatment best fitted for various classes of cases. The detailed technic of major operations is omitted, but differential diagnosis of conditions calling for operative treatment is fully given, with the choice of operation, results to be expected, preparation and after-care. Functional disturbances, medico-legal complications, serologic diagnosis and treatment, and endocrinology receive special consideration.

The illustrations are very well done, especially the photomicrographs illustrating gynæcologic pathology, and there is an excellent index with numerous cross references. The book may be heartily recommended as a valuable addition to the student's and practitioner's library.

Physiological Chemistry. An intermediate textbook with experiments. By C. J. V. Pettibone, Ph.D., Assistant Professor of Physiological Chemistry, Medical School, University of Minnesota, Minneapolis. Pp. 328. C. V. Mosby Co., St. Louis. 1917.

This textbook takes up in Part I the essential theoretical considerations and descriptive details relating to the important biochemical compounds, and to the assimilative and dissimilative processes which are carried on in the animal body. Part II is devoted to laboratory experiments on inorganic salts, carbohydrates, fats, proteins, various digestive processes and qualitative studies of the urine. Micro methods for urine analysis are left for more advanced textbooks.

The present status of knowledge of physiologic chemistry is set forth simply and clearly, and is supplemented by a fairly representative list of books and monographs from which information on debated points may be obtained.

Physical Diagnosis. By W. D. Rose, M.D., Lecturer on Physical Diagnosis and Associate Professor of Medicine in the Medical Department of the University of Arkansas. Pp. 499. C. V. Mosby Co., St. Louis. 1917.

This volume is considerably smaller than most of those on physical diagnosis. It is intended to serve as a ready reference work for the student and busy practitioner. The principles of physical diagnosis and the physical findings in diseases of the circulatory, respiratory and abdominal organs together with the principal diagnostic signs having to do with the nervous system, head, neck and extremities are lucidly discussed in the text and accompanied by a profusion of illustrations, which prepare for, in a considerable measure replace, personal clinical contact. The clinical viewpoint is constantly held in the foreground. This is the first time we have noticed the inclusion of the Barany tests in a general text; the discussion of these tests is accompanied by a diagnostic table showing the results of the tests in normal individuals, in cerebellar and labyrinthine disease.

The book is a production creditable to both author and publisher.

New, Old and Forgotten Remedies. Papers by many writers. Second edition. Collected and arranged by Dr. Edward Pollock Anshutz, author of "Elements of Homœopathic Theory, Materia Medica, Practice and Pharmacy," "Guide to the Twelve Tissue Remedies," etc. 608 pages. Cloth, \$3.50 net. Boericke & Tafel, Philadelphia. 1917.

This volume is a continuation of the series of editions of "New Remedies" begun by Dr. Edwin M. Hale in 1864. The first edition of "New, Old and Forgotten Remedies" was compiled by Dr. Anshutz and appeared in 1900; the present edition contains those of the first edition and probably "all of the new remedies of value that have appeared in the past seventeen

years," — in all 116 drugs are discussed. The papers on individual drugs are presented practically in the same words and arrangement in which they appeared on first publication.

Many of the papers consist wholly of empirical "clinical" observations; many of the tests of pathogenicity were conducted on very few or only one subject and without controls; many of the interpretative remarks seem unwarranted or erroneous; many of the papers are valuably suggestive. Whatever may be the clinically practical merit or scientific status of the drugs discussed, this compilation is of no inconsiderable bibliographic value. The editor has done good service in rescuing these contributions from dusty, forgotten periodicals and presenting them in convenient form for reference.

OBITUARY

Earl Benjamin Maxwell, M.D.

Dr. Earl B. Maxwell of Findlay, Ohio, died in his thirtieth year at St. Vincents' Hospital, Toledo, Ohio, December 25, 1917, of surgical shock following operation for cervical adenitis. He was a graduate of Boston University School of Medicine, class of 1915; a member of The American Medical Association, of the American Institute of Homœopathy and of Hancock County, Ohio, Medical Society.

Max Goldman, M.D.

Dr. Max Goldman, aged twenty-six, died on January 14, 1918, at his home, 1 Allen Street, Boston. He had been seriously ill for several months. After graduating from Boston University School of Medicine in 1913, Dr. Goldman practiced in Boston's West End. He was a member of the Massachusetts Homœopathic Medical Society, Massachusetts Surgical and Gynecological Society, American Medical Association, and B.U.S.M. Alumni Association.

William L. Galloway, M.D.

Dr. William L. Galloway, aged fifty-seven, of St. Louis, Mo., a graduate of Boston University School of Medicine, Class of 1888, Professor of Dermatology in the Homœopathic Medical College of Missouri, and Dermatologist to the Christian Hospital of St. Louis, died in Barnes' Hospital, St. Louis, December 14 last, a week after a surgical operation.

NAVY'S CALL FOR BINOCULARS, SPY-GLASSES AND TELESCOPES: "THE EYES OF THE NAVY"

The Navy is still in urgent need of binoculars, spy-glasses and telescopes. The use of the submarine has so changed naval warfare that more "EYES" are needed on every ship, in order that a constant and efficient lookout may be maintained. Sextants and chronometers are also urgently required.

Heretofore, the United States has been obliged to rely almost entirely upon foreign countries for its supply of such articles. These channels of supply are now closed, and as no stock is on hand in this country to meet the present emergency, it has become necessary to appeal to the patriotism of private owners to furnish "EYES FOR THE NAVY."

Several weeks ago an appeal was made through the daily press, resulting in the receipt of over 3000 glasses of various kinds, the great majority of which has proven satisfactory for naval use. *This number, however, is wholly insufficient, and the Navy needs many thousands more.*

All articles should be securely tagged, giving the name and address of the donor, and forwarded by mail or express to the Hon. Franklin D. Roosevelt, Assistant Secretary of the Navy, care of Naval Observatory, Washington, D. C., so that they may be acknowledged by him.

Articles not suitable for naval use will be returned to the sender. Those accepted will be keyed, so that the name and address of the donor, will be permanently recorded at the Navy Department, and every effort will be made to return them, with added historic interest, at the termination of the war. It is, of course, impossible to guarantee them against damage or loss.

As the Government cannot, under the law, accept services or material without making some payment therefor, one dollar will be paid for each article accepted, which sum will constitute the rental price, or, in the event of loss, the purchase price, of such article.

RENAL FUNCTION IN PULMONARY TUBERCULOSIS

C. W. Mills and J. T. Henderson report studies of the renal function in cases of pulmonary tuberculosis.

In the first series excretion and retention tests were done in forty-four cases. Rountree's and Geraghty's phenolsulphonphthalein test was done in forty-three. An excretion of 60 per cent. or more in two hours was considered normal. The lactose excretion test of Schlayer was done in nineteen. Schlayer's technic was followed and urine specimens obtained later than six hours after the administration of the drug showing a positive sugar test were regarded as abnormal. Blood urea and urinary urea were determined by Marshall's method. Ambard's coefficient was determined. By none of these tests could any serious defect in kidney function be found. All of the cases except ten, even when far advanced, febrile and unfavorable, and with albumin and casts in the urine, were normal. In most of the ten exceptions the abnormality was only slight. From this series of forty-four cases it is concluded that pulmonary tuberculosis even when far advanced and unfavorable is not accompanied by any disturbance of renal function of sufficient grade to be detected by the excretion or retention test employed. Only when the pulmonary disease is complicated by clinically determinable disease (chronic nephritis and renal tuberculosis in our cases) is renal function disturbed.

In the second series forty-three cases were tested by means of Mosen-thal's three-meal diet. The urine was collected at two-hour intervals from 8 A. M. to 8 P.M., and the total night urine from 8 P.M. to 8 A.M. On each of these specimens a determination of the amount (water secretion) and the specific gravity was made. The sodium chlorid in the total day and night specimens was estimated by Volhard's method. No nitrogen determinations were attempted. Most of the patients of this series were far advanced unfavorable pulmonary cases with traces of albumin and casts. A few with clinical evidence of nephritis or renal tuberculosis were included. In studying the results the criteria of Mosen-thal rather than those of Hedinger and Schlayer were followed. The cases may be divided roughly into three groups according as the tests show normal, slightly disturbed or markedly disturbed function. In the group of normals three had albumin and casts, thirteen only a trace of albumin and hyalin casts and three had a normal urine. Those with slight disturbance showed clinically one chronic nephritis, four albumin and casts, four a trace of albumin and hyalin casts and two a normal urine. Those with marked disturbance in function showed clinically three nephritis, two terminal œdema, five genito-urinary tuberculosis, and three a trace of albumin and hyalin casts. In other words the cases of marked disturbance of function are all, except three, cases which have definite clinical evidence, aside from albumin and casts, of renal disease. Where albumin and casts were the only renal abnormality two-thirds of the functional tests were normal and the other third, except for three cases, showed only slight departure from normal. Classifying the cases from the standpoint of their tuberculosis into four groups of afebrile favorable, afebrile unfavorable, febrile though favorable and febrile unfavorable, and excluding cases of nephritis and renal tuberculosis, it would seem that the more advanced and unfavorable the stage of the pulmonary disease, the more apt is there to be a lowering of the renal function. This lowered function, however, is usually of only such slight grade as to be of little significance. Fever appears to have no effect on kidney function according to this test.

The authors conclude that in tuberculosis work it would hardly be worth while to add these tests to the regular routine. In cases where there is a suspicion of nephritis and in genito-urinary tuberculosis they afford very valuable help. Mosenthal's test is the most delicate and should have the preference. Of the others phenolsulphonephthalein is the most valuable. — Mills, Charles W., and Henderson, John T.: The Effect of Pulmonary Tuberculosis on Renal Function, *Am. Rev. Tub.*, 1917, i, 10.

CULTURES OF TUBERCLE BACILLI FROM THE BLOOD AND OTHER BODY FLUIDS IN CLINICAL DIAGNOSIS

Clough has collected from the literature 1508 cases of tuberculosis in which human blood was inoculated into guinea-pigs and the demonstration of tubercle bacilli claimed to have been shown. The percentage of positive results, 12.9, corresponds approximately to that found by Fischer in 1250 collected cases, with 17 per cent. positive inoculations, Fraenkel of 500 cases with 20 per cent. positive results, and by Austrian and Hamman of 863 cases with 11 per cent. positive inoculation. Excluding from her compilation those cases open to criticism, there remain 1345 cases of 1508 with 8.8 per cent. of positive inoculations. Faber selecting 1060 cases tested during life found only 42 per cent. positive while 37 cases tested postmortem showed 38 per cent. of positive inoculations.

If only the cases of miliary tuberculosis among the 1508 are considered, the percentage rises to 66.6, while positive inoculations in the remaining cases of all other types of this disease sink to 6.7 per cent.

Only one case was found in the literature, that of Faber, in which tubercle bacilli were grown from the blood of a tuberculous patient.

The author employed two methods of culture. First: citrated blood was inoculated into flasks of glycerin broth (made neutral or slightly acid to phenolphthalein) incubated several weeks, centrifugalized, and the sediment planted on human blood agar slants, sealed with paraffin and incubated. Second: citrated blood was hæmolyzed with distilled water, centrifugalized at high speed for one and a half hours, the sediment planted on human blood agar slants, sealed and incubated.

By the first method positive cultures were obtained in three cases of miliary tuberculosis. In two of these, guinea-pigs were inoculated with citrated blood. In one case the pig died prematurely, in the other both pigs remained well. By the second method three positive cultures were obtained in two cases of miliary tuberculosis, one blood specimen being obtained postmortem. Guinea-pigs were inoculated with the sediment of the hæmolyzed blood. In the one case the pig developed tuberculosis. In the second case a pig inoculated with the antemortem blood sediment died after three months without tuberculous lesions. By one or the other method negative blood cultures were obtained in two cases of miliary tuberculosis. In one of these only 2 cc. of blood was available for culture and 1 cc. for guinea-pig inoculation. The pig remained healthy for three months, and without glandular enlargement. In the second case the guinea-pig inoculation was also negative as well as the blood cultures. In nine cases of tuberculosis of other types blood cultures were negative, and guinea-pig inoculation done in four cases was also negative.

Tuberculous fluids were centrifugalized and the sediment cultured. Of sixteen spinal fluids, two were negative and fourteen positive. In seven of the latter, bacilli could not be demonstrated in the smears. In five of the cases positive by culture guinea-pigs had been inoculated of which four were positive and one died prematurely. Four pleural fluids were cultured and inoculated into guinea-pigs with one case positive, positive by both cultures and inoculation, though smears were negative. In two out of three fluids from tuberculous joints, in pus from two cases of tuberculous abscess of rib and sternum respectively, positive cultures were obtained. One joint fluid was inoculated into a guinea-pig which died prematurely without lesions. One peritoneal and one pericardial fluid, both probably not tuberculous, were negative by culture and by guinea-pig inoculation. No case in the series

positive by guinea-pig inoculation was not also positive by culture. In the beginning no attempt was made to demonstrate the growth of tubercle bacilli at the earliest possible date. Later they were observed in as short a time as seven days. The initial growth may not be what is commonly looked upon as characteristic. All cultures were verified by inoculation into guinea-pigs. The author feels that the data are insufficient to permit of definite conclusions, but that the evidence would indicate that the cultural method will probably prove more constant and more rapid than that of guinea-pig inoculation. As compared with examination of smears, these are unreliable in the case of blood where a culture gives positive evidence and often negative in the case of clear fluids where cultures may be obtained. The practicability of blood cultures as a diagnostic method will depend upon the frequency with which the tubercle bacillus enters and persists in the blood stream, a point still to be worked out by more reliable methods of study than those employed in the past. The data with regard to experimentally infected animals cannot be assumed to represent the conditions in human cases which are not exactly analogous, and similar work on human beings should be done. In conclusion the author suggests these blood cultures be as an aid in the differential diagnosis of acute miliary tuberculosis from non-tuberculous infections, and that direct cultures be made from clear fluids in which tubercle bacilli cannot be demonstrated by smears. — Clough, Mildred C.: The Cultivation of Tubercle Bacilli from the Circulating Blood in Miliary Tuberculosis, *Am. Rev. Tub.*, 1917, vol. 1, No. 10.

STANDARDS FOR DIAGNOSIS, CLASSIFICATION AND TREATMENT OF TUBERCULOSIS IN CHILDREN AND ADULTS

The Diagnostic Standards Committee of the National Association for the Study and Prevention of Tuberculosis, working in coöperation with the representatives of the Community Health and Tuberculosis Demonstration in Framingham, has prepared a set of standards for diagnosis, and has also attempted to clarify somewhat the standards for treatment in the several stages of the disease. It has also recommended for use in Framingham the National Tuberculosis Association classification with modifications suggested by Dr. W. L. Rathbun, of Otisville, New York.

With relation to the diagnosis of thoracic (pulmonary, bronchial gland, etc.) tuberculosis in childhood the definitions are first given of the following fourteen terms, loss of weight, loss of strength, fever, elevation of pulse, hæmorrhage, family history, exposure, cough, sputum, hoarseness, rales, dullness, altered voice and breath sounds, D'Espine's sign. With these definitions as a basis the minimum standards for diagnosis are enumerated. For the diagnosis of pulmonary tuberculosis in adults with negative sputum the first ten terms above are redefined and upon these as a basis the minimum standards for diagnosis listed.

The classification of pulmonary tuberculosis of the National Association divides cases into four classes: incipient, moderately advanced, far advanced, and acute miliary tuberculosis. Unfortunately, however, lesions and symptoms are not interchangeable but immobilized in each of the three stages, whereas in practice a far advanced case, for example, may present only incipient symptoms, or vice versa. Therefore Dr. Rathbun has suggested the listing of lesions and symptoms under separate headings, designating the lesions as incipient, moderately advanced or far advanced and the symptoms as A, slight or none, B, moderate, and C, severe. This makes possible a greater flexibility and a more accurately descriptive classification of a given case.

From the point of view of treatment adult cases are divided into suspicious, those in which the diagnosis is positive, and the arrested and apparently arrested cases. Recommendations for the treatment of three cases are given. — Standards, for the Diagnosis, Classification and Treatment of Tuberculosis in Children and Adults; Community Health and Tuberculosis Demonstration of the National Association for the Study and Prevention of Tuberculosis, Framingham, Massachusetts, *Am. Rev. Tub.*, 1917, i. 10.

PERSONAL AND GENERAL ITEMS

Capt. Joseph Segal, B.U.S.M., 1917, and Lieut. C. Wesley Sewall, B.U.S.M., 1914, have been ordered to Fort Oglethorpe, Ga., for instruction.

Lieut. David L. Belding, B.U.S.M., 1913, has been transferred from the Army Medical School at Washington, D. C., to the Base Hospital at Camp Wheeler, Macon, Ga., and writes that he is "fourth laboratory man in the sickest camp in the United States."

Drs. Benj. T. and Adaline B. Church have moved from Winchester, Mass., to 483 Washington Street, Brookline, Mass. Dr. Robert L. Emery, recently of Rockport, Mass., has taken Dr. Church's Winchester residence and practice.

Dr. Jacob Golub, B.U.S.M., 1915, has removed his office from 857 Blue Hill Avenue to 1039A Blue Hill Avenue, Dorchester, Mass.

Theodore Kocher, world-famous surgeon, died recently in Berne, Switzerland. Professor Kocher was born on August 25, 1841, in Berne and graduated from the University there in 1865, later becoming a pupil of Billroth in Vienna. He was one of the most careful and painstaking surgeons that ever wielded a scalpel, and his wonderful knowledge of anatomy enabled him to plan beforehand every step of the most difficult operation. Although he did monumental work in nearly all departments of general surgery, he is best known for his study of the thyroid gland and its diseases.

Dr. Harold L. Babcock, Assistant Aural Surgeon at the Massachusetts Homœopathic Hospital, has been commissioned First Lieutenant in the Medical Reserve Corps, and assigned to active duty with the Aviation Medical Examining Unit, Boston.

Dr. Dana F. Downing, B.U.S.M., 1904, who has been located for the past three years at Warren, Illinois, has been appointed Assistant Physician in Westborough State Hospital.

Dr. Winfred Overholser, B.U.S.M., 1916, at present at the Westborough State Hospital has received a commission as First Lieutenant M.R.C., and has been ordered to New York for study in his specialty.

Dr. J. Walter Schirmer, B.U.S.M., 1908, has been commissioned Captain, M.R.C. and has been ordered to Camp Devens for orthopædic service.

The Pittsburg Homœopathic Hospital has received donations of 75 milligrams of radium for use in charity and semi-charity cases.

Dr. G. Forrest Martin of Lowell has announced that his practice will hereafter be restricted to general surgery, surgical gynæcology and consultations.

TREATMENT OF PNEUMONIA

Many months ago, writes Leonard Williams in the *Practitioner*, London, a friend said to me, "How do you treat pneumonia?" Having never completely divested myself of my truculent mid-Victorian training I replied, "With Faith, Hope and Charity. Faith, in the *medicatrix naturæ*, Hope, for the absence of complications, and Charity with those who differ from me."

"You don't give Digitalis?" "No."

"Nor Calcium?" "Neither."

"Not even thyroid?" "Animal farceur!"

"And you make no local applications to the chest wall?" "Never."

"Then you are wrong. Listen."

And, being a willing listener, I listened. Some twenty years ago he had seen much hospital work in Paris. At that time in the treatment of pneu-

monia the practice of many of the French physicians was to blister the affected side, and he had satisfied himself that the cases thus treated did better than those in which the blistering was omitted, and he adopted the practice in England. After a time, however, largely on account of the objections urged by the patients and their friends to the pain and discomfort produced by the blisters, he rather reluctantly ceased to apply them and reverted to the "expectant" method in which he had been nurtured. Time went by, and one day he received an advertisement of a preparation known as antiphlogistine, for which it was claimed that when applied to the affected side in pneumonia, either lobar or catarrhal, it had the effect of reducing the temperature, slowing the pulse-rate and promoting sleep without any additional treatment. With the memory of his blistering days full upon him, he decided to give it a trial. His experiences were such as to give him encouragement, and to bring him near to believing that not all men, not even all American advertisers, were necessarily liars. . . .

I decided to turn my attention to the claims of antiphlogistine, which up to that time I confess to have regarded merely in the light of a convenient form of poultice, locally dehydrating, decongesting and comforting, but probably innocent of any effect upon pulse rates and temperatures. Here, again, one case in the history of my conversion must suffice.

In November of last year a young Belgian of 20 years was admitted into the French hospital with a temperature of 104 degrees, a quick bounding pulse, slight cough and severe pain in the left side. On admission physical examination was negative. The following day his nose bled, but neither I nor the resident—an experienced Belgian doctor—could detect any signs in the chest. That night he was delirious and coughed a great deal. On the following day he voided some sticky sputum which was typically rusty, and developed labial herpes. Physical examination now revealed the classical dullness and tubular breathing over the lower lobe of the left lung for which I had been looking. His temperature was 105 degrees. At about 4 P.M. a gamgee jacket thickly spread with antiphlogistine was applied over the whole chest. The following morning his temperature was normal.

Now, I do not pretend to explain these happenings; for the benefit of the open-minded, I content myself with recording them. The clinician must protect himself against the sneers of the laboratorist. That we are unable to follow the processes by which a healing measure produces its effect is a sorry reason for discarding it. The search for a scientific explanation is a laudable and, academically, an interesting adventure, but in practice it is but a sleeveless errand. Trousseau, probably the greatest clinician of any time, has expressed in characteristically simple words the only position proper for us to adopt: "*Je ne vois en thérapeutique que deux choses: le médicament appliqué à l'organisme, et le résultat éloigné de cette application. Quant aux phénomènes intermédiaires, ils nous échappent, et nous échapperont probablement toujours.*" Who can explain the process by which digitalis works its wonders; and what advantageth him who can?

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ORIGINAL COMMUNICATIONS

SOME CLINICAL REMINISCENCES *

HOWARD P. BELLOWS, M.D., Boston, Mass.

It is now more than twenty-seven years since I stopped the general practice of medicine altogether, save in my own family or to give emergency help, in a friendly way, until the service of some general practitioner could be obtained. Back beyond these twenty-seven years of varied experiences as an exclusive specialist, my mind travels easily, however, to the thirteen years of busy general practice which preceded them, and I recall with perfect clearness the detail of many cases and even the results of many individual prescriptions. The knowledge thus acquired, or thus verified, became a part of my mental equipment in those days because it rested upon facts of practical personal experience — personal conquests in the fight against disease. That which we learn from books or even from the experience of others, our teachers in medicine perhaps, soon drifts away into the mists of memory, but the knowledge which we practically apply at the bedside, which brings definite results to pass which we see with our own eyes and which gladden our hearts, this knowledge is pegged down in our memory and stays there through years of overlying experiences.

Let me indulge in reminiscence, more or less at random, and recall some of my earlier personal experiences as a general practitioner which may prove of interest, or even be of some use or of suggestive value, to others. First, one of my earliest cases, in which I was stimulated to my best effort because of personal interest in the patient, and because her previous medical advice, though of the very best, had only availed for palliation and not for cure. It was a peculiar irregularly recurrent headache, of some years' stand-

* Read before the Hughes Medical Club, Jan. 18, 1918.

ing, which incapacitated the patient, an otherwise remarkably strong and healthy young woman, and caused great distress and suffering during its continuance. Time and again I went over this case and put hours of closest study into the search for the homœopathic *simillimum*. This I finally decided to be BARYTA CARBONICA, a remedy which I had certainly not previously associated in my mind with headaches. The particular symptom which led me to this choice was the "sensation as of a gauze before the eyes." This interference with vision always preceded the headache and came to be regarded as a premonitory sign. Now comes the point: I found that a single powder of Dr. Carroll Dunham's two-hundredth potency of baryta carbonica, taken upon the earliest appearance of the headache, would afford the most marked relief, while lower potencies of the same drug had little or no effect at all. Not only that, but the intervals between the recurrence of the headache lengthened and eventually it stopped altogether and has never recurred. It is not the apparent cure of the headache by this remedy which I am emphasizing, however, but the fact that the two-hundredth attenuation, so-called, was effective while the lower attenuations were not.

I had provided myself with a large case of Dr. Carroll Dunham's two-hundredths upon my graduation and used them to the best of my ability in many of my earlier prescriptions. Although I was then associated in practice, as a beginning practitioner, with Dr. Conrad Wesselhoeft, and frequently discussed my cases with him, he never at any time discouraged my use of these two-hundredths but always encouraged me to work out my own results and come to my own conclusions on the question of potency. Occasionally I felt greatly encouraged, and then would think my results were more satisfactory when I worked with the sixth decimal or the third decimal attenuations.

One case which impressed me was that of a patient of mine who suffered extremely from vomiting in pregnancy. During a previous pregnancy she had similar trouble and had found little or no relief from anything. I tried ingluvin, which was then in much repute, and prescribed the usual homœopathic remedies which seemed indicated for her condition, but without success. Then, after more careful study, I decided that NATRUM MURIATICUM was the *simillimum*, although I had never used or even thought of it in that connection before. The sixth decimal failed utterly and then I tried the thirtieth centesimal with the most gratifying success. Upon discontinuing the remedy she grew worse, however, and again I tried the lower potency with failure and the higher with success. As I renewed her prescription I tried these two attenuations sufficiently thoroughly to convince myself that the higher would do what the lower would not do. There were other instances of this as my

experience grew in prescribing, but the final outcome was that my confidence in the action of the sixth and third attenuations, in my hands at least, became so established that I came eventually to use them almost wholly in my practice, but, at the same time, I had learned not to scoff at much higher attenuations than these or at those who use them. I never myself tried any higher potency than an occasional thousandth and I acknowledge that my experiments in that direction were comparatively superficial, but as far as they went they were certainly sincere.

Somewhat associated with the subject of potency is that of the aggravation of symptoms by the homœopathically chosen remedy. I must confess that in forty years of practice I have had little or no experience of that nature. That would seem to indicate, according to the common explanation of such aggravations, and judged by the apparently common experience of some others, that I am either a poor prescriber or a poor observer. As I certainly get results from my prescriptions, however, and am considered reasonably observant in other directions, I am not willing to admit that explanation. The only one I can offer is that such aggravations may be far more common when the higher potencies, so-called, are used than when one uses the lower attenuations. If that be the case it seems to me to be really a point in favor of the lower — particularly if the curative results are equally satisfactory. This aggravation is one of the bugbears of young prescribers. I was always looking for it at one time but it has long ceased to trouble me. Overaction of homœopathic remedies I have occasionally seen, but that is different from the aggravation of existing symptoms. One case I cannot forbear relating. One of my earliest calls was to a man, socially very prominent, who did not believe in homœopathy but who sent for me urgently one Sunday morning, either from the persuasion of some member of his family or because he could not get his regular doctor, I do not know which. He was a large, full-blooded man who habitually over-stimulated and who had been on quite a racket the preceding evening. He had suffered a good deal in the cold winter's night in getting home and felt sick on awakening. He was a headstrong man, however, and insisted upon getting up and dressing and would not go back to bed. I found him almost in a chill, with chest and breathing considerably embarrassed, and feared pneumonia. I gave him some aconite, the third decimal attenuation, eight drops in a half-glass of water, directing that two teaspoonfuls be given every hour, and I would look in again in two or three hours. In little more than an hour's time I was urgently called again. It was not that he was worse but that he wanted to tell me what he thought of me. I found him sitting in the middle of the room with a face nearly crimson and the perspiration literally rolling off it — a towel in

one hand for mopping and a palm-leaf fan in the other, while his shirt-bosom was saturated three inches down from the neck-band. He had stripped off his collar and necktie when the conflagration began. His opinion of me was by no means complimentary and I was never called to that house again, but he did not have pneumonia and I don't think he ever afterwards claimed that homœopaths gave nothing but water for medicine.

There is with all practitioners a fondness for some particular remedies, which is developed by experience and success in their use. The polycrests come in for the major share with all of us, but I am thinking of less frequently used remedies, which have served us in a more limited or, I might say, a more individual way. In my own experience there stands CROTON TIGLIUM, for instance, as a remedy for chilblains. In its pathogenesis there is not much to lead us to that — not much besides the symptom “itching and painful burning with redness of the skin” — and yet after I had heard it recommended by Dr. I. T. Talbot for chilblains I verified his experience repeatedly and rarely found it fail in the attenuation which we now call the fourth decimal — the third in his day.

Another suggestion which I got from Dr. Talbot in a consultation case was of great value to me afterward — that was the use of gummi guttæ, or GAMBOGE, in a certain type of diarrhœa. This is characterized by a yellow or greenish watery stool like croton tiglium, and with similar rapid expulsion, but without the characteristic aggravation of croton tiglium from eating and drinking, and with three characteristic accompaniments of the stool, two of which do not belong to croton tiglium. These are: *before* stool “sudden urging, with hot pinching throughout the abdomen”; *during* stool “strong urging, causing the stool to pass quickly” (this being like croton tiglium); *after* stool “feeling of great relief in the abdomen, as though an irritating substance were removed from the intestines.” There is “burning in the anus” after stool but not the tenesmus of croton tiglium.

In the uterine sphere three remedies in particular stand out as having served me well — apart from those more commonly used. These are CROCUS SATIVUS, trillium and stannum. The first was useful to me repeatedly in correcting metrorrhagia where the discharge was “dark, viscid, stringy blood, in black clots.” TRILLIUM enabled me to cure two or three exceedingly obstinate and long-standing cases of metrorrhagia, in women beyond middle life, characterized by “gushing of light red blood from the uterus, at the least movement” and especially after over-exertion of any kind. STANNUM was brought to my notice, as a uterine remedy, by the following in Hughes’ “Manual of Pharmacodynamics”: “The sensations experienced by a female prover in the uterine region have suggested its use in relieving the sensation of “bearing down”

so often complained of by women, and even in benefiting *prolapsus uteri* and *vaginæ*. I have hardly ever known it to fail to effect the former purpose and I have been quite astonished at its power over prolapsus. I suppose it acts upon the uterine ligaments in some way." Also in his "Manual of Therapeutics," under Displacements of the Uterus, he writes: "In prolapsus *stannum* is a most useful medicine. It relieves speedily the sensation of bearing down and seems to strengthen the uterine ligaments." In a goodly number of cases of prolapsus I tried this remedy with results which surprised and gratified me, using the third decimal trituration.

Another suggestion of Dr. Hughes led me to success a number of times in the correction of a condition which, to ladies especially, is a source of great annoyance and embarrassment. Here is the passage: "There are certain uses of PETROLEUM for which I am indebted to the experience of my friend Dr. Madden, but which I have frequently verified for myself. These are to check foetid sweat of the axillæ; to relieve tenderness of the feet when these too are bathed in a more or less foul-smelling moisture, *etc.*" In the pathogenesis the symptoms are "Foetid sweat in the axillæ" — "feet tender and bathed in a foul moisture." I used the dilution now called the fourth decimal and succeeded repeatedly without the use of any local corrective whatever aside from cleanliness.

Under CIMICIFUGA one finds the symptom, "Dry spot in the throat causes cough." It is a symptom which is not accentuated in any way and might readily be passed over without notice. To me it has proved of very great value and has led me time and again to success in the alleviation of an irritating and persistent cough. It is a dry and exceedingly aggravating cough, somewhat resembling that of *rumex crispus*, but with few distinguishing symptoms beyond the dry spot in the upper trachea or lower part of the larynx, which also tickles at times, and induces a cough which I have known to yield readily to *cimicifuga*, third decimal; after it had resisted the action of several other remedies which have apparently been well chosen.

CARBO VEGETABILIS is a remedy which served me well, in the third or sixth decimal trituration, in meeting a tendency to epistaxis, not especially profuse but persisting in appearing two or three times a day for many days or even for several weeks. I gave it once to a student in the Harvard Medical School, saying to him, "If these little powders (it was before the days of tablets) stop your nosebleed will you acknowledge that they have any virtue?" He said yes, and I gave them to him. Sometime afterwards I met him and found that the bleeding, which had troubled him daily for a long time, had wholly ceased after taking the powders and he was curious to know what the remedy was. When I told him that he

had taken one one-thousandth of a grain of charcoal in each powder he could not conceal the expression of incredulity and almost of contempt which crept into his face. It certainly did not convert him to homœopathy.

MOSCHUS was rather a favorite remedy with me in certain nervous conditions, and although I used it in a very considerable degree of attenuation I found my patients complaining that the glass in which I prepared it was never fit for family use thereafter because of the faint odor of musk which hung around it in spite of any washing which could be given it. I used, therefore, in my later prescribing to prepare moschus always in some old glass which could be thrown away. This suggested the thought to me whether in the process of preparing the higher attenuations of our remedies, particularly if they are prepared by the fluxion method, there might not penetrate into and be held in the interstices of the glass bottle or other container enough of the original medicine to come out again into the medium of dilution after the bottle or container is at rest, and form an eventual dilution which is really far lower than the number of the potency which is inscribed upon the cork. This is a thought only.

Among the rather unusual cases which come to my mind was that of a little girl, about two years of age, who developed a very rapid and severe sickness which seemed like diphtheria, but without the slightest involvement of the throat. A thorough physical examination to determine the nature of the illness revealed a diphtheritic patch upon the vulva. There was no laboratory test at that time to confirm the diagnosis and the bacterial nature of the disease was not then even suspected — but there was the patch and there was the complex of clinical symptoms present. The approved treatment of the time was the cyanid of mercury internally and an aqueous solution of permanganate of potash locally. In spite of this the little patient came down to death's door and I was called once in extreme haste to find the pulse gone and the breathing barely perceptible. The sight of the white pinched nose and the marbling skin back of the ears made me think the little girl had left us, but an immediate rectal injection of brandy and water turned the scale, the pulse came flickering back, and from that new start we made progress, building up the strength with careful feeding, giving arsenicum internally, and recovery was complete. There was no other case of diphtheria in the household or neighborhood, there was no known exposure, and none of the attendants contracted the disease — altogether a rather unique experience.

Another case which I recall was that of a boy, about sixteen years of age, who had been a sufferer for years with hip-joint disease, discharging abundantly through a fistula in the thigh. Operation was refused. The parents of this boy decided to try homœopathy

for any possible palliation, and I was called in. I tried hepar sulphur and calcarea fluorica but found the best effect from SILICA, sixth decimal. This really seemed to change the character of the discharge for the better, making it less offensive and excoriating, and the general health of the patient also improved. But after several weeks' use the remedy seemed to lose its effect and things came to a standstill. I then found that the so-called *lapis albus* — the silico-fluorid of calcium — or fluor-spar — in the sixth decimal trituration, started the case forward for a time, when the progress again stopped until silica was once more prescribed. The patient's family moved away from town and I lost sight of the case after some months of treatment. I am not citing it on account of any remarkable therapeutic success, although the parents and the patient himself felt well repaid for their trial of homœopathy, but I am citing it to bring forward the point that lapis albus apparently supplemented or reinforced the action of silica, and I got the best results when I changed these remedies, one for the other, every three weeks. This I have since done with equally good effect in a considerable number of cases of chronic suppuration involving bone tissue.

In my general practice I made it a cardinal point not to let my patient's strength ebb too far at the beginning or during the course of any prolonged illness, and I know that I gained a tremendous advantage in many instances by this means. To this end I resorted oftener than most physicians to rectal feeding, in which I came to have great confidence. In this connection I will cite two cases of gastric ulcer, both patients women of early middle age who were desperately sick. The diagnosis was confirmed in consultation, in one case by Dr. I. T. Talbot and in the other by Dr. Henry C. Ahlborn. In both instances the prognosis was very grave, as one would expect since surgery in such cases was not even dreamed of in those days. The vomiting and gastric distress was so extreme that I made the proposition to stop all food and drink absolutely and give the stomach a complete rest. Beyond the sucking of small pieces of ice, which were allowed to dissolve in the mouth only, I carried out this program inflexibly for two weeks in one case and three weeks in the other — relying wholly upon feeding per rectum. Of course both patients were in bed all the time attended by the best nurses obtainable (there were no graduate nurses then) and there was no loss of strength from any exertion whatever. At the end of this prolonged abstinence from ordinary food and drink the body weight of each patient, so far as we could determine, was little different from that at the beginning. Under careful medication, arsenicum being the chief reliance, the gastric symptoms had ceased and we began feeding with some specially prepared clam water given very judiciously, and then arrowroot

gruel, beef juice, *etc.*, gradually accustoming the stomach to its duties. The recovery was complete in both cases and one patient lived about twenty and the other over thirty years afterwards. Now as to the mode of rectal feeding which was followed so successfully in these cases, for it is solely for the purpose of leading up to this that these cases are cited. My dependence was solely upon a preparation called "Beef Peptonoids," a standard preparation in those days. This was a practically predigested food in the form of powder, which was mixed, just before using, with a definite quantity of warm water. I had four ounces of this mixture introduced into the rectum every four hours, day and night. After thirty-six hours or so this would no longer be retained but would be ejected. Here comes the point upon which my success turned. When that occurred I had a full warm water enema given, clearing the rectum and colon as perfectly as possible. Then two hours' rest were allowed and the food injection resumed and continued as before.

The specially prepared clam water with which I began gastric feeding was suggested by Dr. Ahlborn and often afterwards stood me in good stead. The freshest clams procurable were washed separately under a running faucet and laid on their sides, in rows, until the bottom of a shallow pan was covered. Enough cold water was added just to cover the shells. The pan was then placed in the oven and kept there until every shell stood open. The liquid was then drained from the pan, strained and served, just as it was, without dilution or seasoning, unless a little salt was especially desired.

In this connection I want to refer to a rather unusual meat preparation which I first saw used in London nearly fifty years ago. I obtained the recipe for it there and often used it in my practice — although the expense attending its preparation at the present price of meat would be, for some families, almost prohibitive. Take equal parts of beef, mutton and veal, remove all fat, cut in small pieces and mix thoroughly. Put into a bowl, without adding any water, cover with a saucer and stand at the back of the stove or in very moderate heat (not in water) for six or eight hours. Compress and strain carefully and use salt alone for seasoning. On cooling a very concentrated meat extract will be obtained, sometimes becoming jelly, which can be fed in small quantities on the tip of a spoon. The flavor of this is quite different from that of any other meat preparation and it makes a very welcome and agreeable change when patients require something new and appetizing.

My memory now turns in another direction. I recall a cold winter's night, in the first year of my practice, when I was about to put out the light in my office, at a rather late hour, and go upstairs to bed. As I stooped over the lamp to blow it out the thought

came to me, "You are going to be wanted soon in a hurry and you'd better not undress but be all ready to go." So clear was the thought that I did not question it at all. I simply turned down the light and stretched myself upon a lounge in the office, covering myself with an afghan and going half asleep. Before I quite lost myself I heard the sound of footsteps crunching in the snow as somebody in the distance came running up the street. I thought "That must be the man coming for me." A minute later he dashed up the walk to the house and began pulling the bell with one hand and pounding the door with a heavy stick in the other hand, so great was the urgency. The call was to a confinement case which was going badly, in a part of the town where I had never been and in a family which I had never heard of.

On another occasion, three or four years later, I was seated in my office one night, at the end of a long day's work, studying a case very intently in order to send a remedy by the morning mail to a patient of mine who had moved to another city and who had written me for a prescription, stating her symptoms with rather unusual fulness and accuracy. It was not an ordinary combination of symptoms and I was not a little puzzled as to its *simillimum*, after going over a good number of remedies. It was after midnight, everybody had retired and nothing interfered with my concentration, although I was very tired. I sat back, weighing the remedies in my mind and not satisfied with any of them, when the thought came clearly — "Look up *asarum*." I did not seem to know anything about that drug and had never prescribed a dose of it in my life, but I turned to my Jahr's "New Manual or Symptomen-Codex," published in 1848, but still one of the most valuable and highly prized works on *Materia Medica* in my library, and there I found, in the symptomatology of *asarum* just the complex which I was seeking. I gave the remedy and it cured the case.

The first of these two experiences was plainly an instance of telepathy. In the second there was doubtless some knowledge of the pathogenesis of *asarum* somewhere in the back of my head, remaining from my student days, but it was odd that it should recur to me in just that manner. A third experience comes to mind in this same connection — another possible instance of telepathy but over a much greater distance. I was in my stateroom aboard a ship lying off Joppa and was packing a grip to go up to Jerusalem for a few days, thence to return to the ship. In the course of my packing I came to a case of aural instruments, with head mirror, specula, *etc.*, in my steamer trunk. I was brushing this aside when the thought came to me, "You are going to need this case in Jerusalem and you'd better put it into your grip." I did so at once and thought no more about it. We went up by rail, and as the train pulled into the station at Jerusalem a gentleman came working his

way onward through the crowd and evidently was enquiring for somebody. Soon he was referred to me and he came up, asking if I was Dr. Bellows, an aurist, from Boston, who was cruising on the *Aller*. When I replied that I was, he told me that a young lady at the Hotel Howard was suffering frightfully from trouble with one of her ears and he begged me to go at once to see her, even before going to my hotel. Everything which I needed was right in my bag and I went with the gentleman immediately from the train to the patient and took charge of the case, to the great relief, both mental and physical, of the sufferer. She turned out to be a young lady who had been a passenger upon the same ship with me, who had left the ship two or three weeks before to journey in Palestine, and who knew that I was due in Jerusalem upon that date and train, but I had never made her acquaintance up to that day. The point is, of course, that I should have been impelled to put those instruments into my bag in readiness for the service required so urgently when I should ordinarily never think of taking them with me.

But I am getting away from my subject. Instead of clinical medicine I am heading pretty directly towards psychology. I will stop where I am before my ramblings take me too far afield.

TUBERCULIN THERAPY

HERBERT F. GAMMONS, M.D., Carlsbad, Texas

Tuberculin is a term used to designate products of the tubercle bacillus. It was first used by Koch to describe his "Old Tuberculin," but all of the different products of the tubercle bacilli are designated under the common head tuberculin.

Among the many different tuberculin preparations are:

a. Old Tuberculin (O. T. or A. T.). Pure culture of tubercle bacilli grown four to six weeks on bouillon, filtered, then evaporated to one-tenth of its original volume. The resultant fluid is dark brown, syrupy, and keeps indefinitely. It consists of a fifty per cent. glycerin extract of the soluble product of the tubercle bacilli.

b. Original Old Tuberculin (T. O. A.). This consists of the original filtrate of the tubercle bouillon culture and varies from the old tuberculin in that it is not heated and reduced to one-tenth of its volume. Spengler and Denys made use of this tuberculin under the name "*Le Bouillon Filtre*."

c. The Aqueous Tuberculin of Maragliano (*Tuberculina Aquosa*). It contains all the water-soluble extracts of the living tubercle bacilli obtained on extraction of the living bacteria in distilled water followed by filtration.

d. New Tuberculin (T. R. *Tuberkulin Rückstand* or Residual Tuberculin). Cultures of young tubercle bacilli are thoroughly dried in vacuum and finely ground in mortars. The pulverized bacilli are agitated in distilled water and the turbid fluid is centrifugalized. The sediment thus obtained composes the T. R. or the bacillary residue. T. R. therefore contains the aqueous insoluble components of the tubercle bacilli while the soluble ones are retained in the opalescent supernatant fluid which Koch called T. O. (*Tuberkulin Oberschicht*.)

e. New Tuberculin, Bacillus Emulsion or *Bacillen Emulsion* (B. E.) consists of T. R. and T. O. The living tubercle bacilli are first pulverized in a mortar and then suspended in salt solution. Centrifugalization is not necessary but sedimentation is required. Fifty per cent. of glycerin is added for preservation.

f. Watery extract of von Ruck. This is made by extracting with water the pulverized bodies of bacilli which have been previously washed free from culture fluid with water and then extracted with alcohol and ether for the purpose of removing fat.

g. Much's Tuberculin. Much and Deycke believed that the reason for the indifferent success obtained in the use of tuberculins lay in the composition of the tubercle bacilli, which is a complicated organism, and that the most of the tuberculins were prepared without taking this fact into consideration and therefore proved unsuitable antigens for active immunization. After much experimental work they discovered that weak organic acids acting upon the tubercle bacillus will "unlock" but not dissolve the bacillary bodies. They employed lactic acid, and after the acid had been allowed to act upon the tubercle bacillus for a number of weeks the mixture could be divided into two parts by centrifugalization; the soluble part of the tubercle bacillus was contained in the lactic acid and the residue consisted of the unlocked bacillus. The former was found to be toxic, comparable in many respects to Koch's old tuberculin, in that it produced death when injected into tuberculous guinea-pigs, but possessed no immunizing and therapeutic properties. The residue had however strong immunizing properties when injected in increasing doses into guinea-pigs and was non-toxic.

Bovine tuberculin, which is made from the bovine strain of the tubercle bacilli, seems to be less toxic than the human in some cases.

Different observers have made antigens out of the fatty capsule of the streptothrix and report some success in immunizing patients; the theory of action being that it produces antibodies for the capsule of the tubercle bacillus which is not easily dissolved by the normal body fluids. After immunizing with this wax-like substance tuberculin has been used and good results reported.

Tuberculins have been sensitized, especially the B. E., by mixing with the serum of tuberculous animals and then separating the serum by centrifugalization.

The most widely used preparations are O. T. and B. E.

Tuberculin must not be considered as a cure for tuberculosis. The question arises whether it is at all possible to obtain active immunization by the injection of an antigen in a condition where infection has already taken place and produced pathological changes. The answer to this is to be found in Koch's fundamental experiments, which constitute the starting-point of the entire tuberculin study.

If a normal guinea-pig is inoculated with tubercle bacilli the point of inoculation very soon closes. After ten or fourteen days there appears at the site of inoculation a small hard nodule which finally ulcerates. This shows no tendency to heal and remains so until the death of the animal. If however an already tuberculous guinea-pig is similarly inoculated, while the point of inoculation closes no indurated nodule appears. Instead, a necrotic process of the skin sets in after the second day which finally terminates in the casting off of the slough and the formation of a flat ulceration that heals rapidly. It does not matter whether living or dead tubercle bacilli are used in the second injection.

The fact that while the majority of people become infected with tubercle bacilli sometime during their life, only a small number show symptoms referable to the disease and the rest undergo spontaneous cure is also very suggestive.

Koch further showed that the infection of tuberculous guinea-pigs with large amounts of tubercle bacilli produced rapid death, while frequently repeated small doses evinced favorable effects upon the site of the injection and the general condition of the animal.

In the employment of dead tubercle bacilli on man for therapeutic purposes serious difficulties were met. It was found that the inoculated dead bacilli were not absorbed but remained for a long time at the seat of the inoculation and instigated suppurative processes. If injected intravenously, formation of tubercles followed. Koch reasoned that these harmful effects were due to the non-absorbable parts of the bacilli, in the main the bacterial capsule. He therefore attempted to extract the immunizing substance and in this way brought about tuberculin.

That tuberculin does not meet the requirements of an absolute cure is proved by the fact that an animal immunized against tuberculin will not be protected against a later infection of living bacilli. Therefore it cannot be expected that immunization of a tuberculous individual with old tuberculin will protect him against living tubercle bacilli.

Citron¹ says: "When in an individual who has passed through a course of tuberculin treatment there are found fully virulent tubercle bacilli in the sputum, it is no proof that the tuberculin treatment has been inefficient. In fact there are strong possibilities that the tubercle bacilli have been transformed into saprophytic bacteria.*"

By analogy it would seem that attempts to immunize patients with living tubercle bacilli would be warranted. Along this line Webb² by repeated inoculations of gradually increasing doses of virulent tubercle bacilli has been able to inject as many as 150 000 living tubercle bacilli into a guinea-pig without harmful results, whereas in normal guinea-pigs as small a number as 20 will cause death if injected at one time. He has also by very careful methods injected up to four live tubercle bacilli into a healthy person without harmful results.

On examination of tuberculous organs of animals treated with tuberculin there will be found within the healthy tissues surrounding the focus a fresh inflammatory reaction. This consists of a sero-fibrinous exudate and a zone of leukocytes intruding to a certain extent upon the tuberculous lesion. Tuberculin acts only on tuber-

*[The logic of this statement seems faulty. Ed.]

culous, not on necrotic tissue. Koch considered that the tuberculin brought about death of the tuberculous tissue.

Besides the factor of partial immunization, Wassermann, Bruck and Citron³ have shown that it is the focal reaction which is the beneficial result of tuberculin therapy. The hyperæmia produced leads to a destruction of tuberculous tissue; there is a formation of connective tissue which encapsulates the focus and there is an associated local stimulation of antibodies.

There are three distinct periods in the history of tuberculin therapy. The first began when Koch made known his discovery of tuberculin in the year 1890. At this time the aim was to produce marked reactions and to continue the treatments until no further reactions were obtained. In lupus, glandular and bone tuberculosis 10 mg. was the initial dose. In tuberculosis of the lungs 1 mg. was the beginning dose. Quite frequently 10 mg. was given to a strong person and rapidly increased. While Koch soon recognized that this severe treatment was only suitable for the incipient cases, very sick and far advanced cases were similarly treated by many physicians. Following such procedure decidedly unfavorable results were obtained in the advanced cases and the once highly praised remedy was entirely rejected.

During the second period only a few followers of Koch continued their studies. They, however, made it their business to investigate the causes which accounted for the unfavorable results in tuberculin therapy. The success of these later investigators brought about a revival of interest in this therapy, it was again taken up (third era) and in selected cases has been shown to be of decided benefit when given properly. While it was the aim in the early era of tuberculin therapy to produce strong reactions, it is now the general opinion that it is best to avoid reactions, especially elevation of temperature.

It is necessary to begin with small doses and if reactions appear to wait for their subsidence and then repeat the dose. The dosage should not be reduced, as thereby instead of immunity hypersusceptibility is the result.* The higher the dilution the less likely is the occurrence of hypersusceptibility.*

Citron¹ recommends B. E., and out of 205 patients treated at the sanatorium at Koltbin reports 23 cures, 191 total improvements and 14 negative results.

Combe⁴ says, regarding his systematic treatment of children with tuberculin, "If the dose of tuberculin injected subcutaneously is adapted to the parenteral digesting powers of the bābe the production of antibodies proceeds regularly and there is a general immunizing reaction in addition to a focal cicatrization reaction. If

* [We are unaware of any valid experimental data to warrant these statements. -ED.]

the dosage is excessive then anaphylaxis instead of immunization is induced. He regulates the treatment by the Mantoux endermic reaction. Ten years of use have given him good results in localized tuberculosis.

White⁵ says: "The choice of the selection of tuberculins should be restricted to those which we know the most about and have proved efficient." He mentions in this class, old tuberculin, bouillon filtrate and bacillen emulsion.

White and Marcy⁶ report a case of a tuberculous man who developed a tuberculous ulcer of the tongue. The patient was going down hill very rapidly on account of not being able to eat; after four doses of tuberculin were injected into the base of the ulcer a complete healing took place.

Fonss⁷ reports the use of tuberculin in 76 cases of lupus, to locate the process.

Ellis and Gay⁸ treat tuberculous eyes by the instillation of bovine tuberculin, in different strengths, into the conjunctival sac, and feel that the eye thus acquires a permanently raised resistance.

Blumenau⁹ reports good results in incipient and occult tuberculosis in children by the use of tuberculin in the following manner. He applied a drop of pure tuberculin to the forearm and then shaved off a piece of skin through it; the tuberculin was rubbed into the skin until dry and after a definite interval the number of drops was increased gradually up to four.

Bertarelli¹⁰ after experimenting on himself with tuberculin and doing complement fixations, theorizes on the prophylactic treatment of exposed people with tuberculin.

Sieber¹¹ reports 46 surgical tuberculous infections treated with tuberculin, 19 having been discharged well, 16 improved and 5 had been lost sight of.

Bonime¹² gives good reasons indicating that more frequent and earlier use of tuberculin in renal infections is essential to a more hopeful outlook for these conditions.

Cunningham¹³ believes that tuberculin should be used indefinitely after operating in genital tuberculosis in the male, as this immunizes the patient against fresh outbreaks of the disease.

Davidson¹⁴ reports results obtained from treating 50 advanced cases with new tuberculin, and while he does not claim to have cured a patient with tuberculin, still these patients have put on weight, cough and sputum have decreased and the general health has improved.

Ringer¹⁵ says tuberculin is contraindicated in those already overloaded with toxins or showing a personal idiosyncrasy, and that a progressive regular dose with control of the tolerance of the patient is the only successful way to administer tuberculin.

Pottenger¹⁶ says: "The effect of tuberculin as studied in the

larynx has demonstrated to me beyond question the effect of the focal stimulation in the production of fibrosis." He further states that he has seen good results follow the use of tuberculin in tuberculosis of the tongue and that it should be used in tuberculous arthritis.

Bonney¹⁷ reports 102 cases treated with B. E. and says, "The ultimate results of the tuberculin therapy on the whole were more gratifying than had been expected."

Knopf¹⁸ says, "Whatever good results have been obtained with tuberculin must be ascribed to judicious selection of cases, to the careful administration of the product and the unusual care exercised in the avoidance of severe reactions."

Simon¹⁹ reports a series of cases treated with Much's tuberculin and feels better satisfied with the results obtained with this tuberculin than with any other.

Baldwin²⁰ says, "If tuberculin treatment is tolerated well, symptomatic improvement should be looked for in from one to three months. If fever attacks continue, weight is stationary or lost and sputum increases, there is something wrong and treatment should be stopped. Should the reverse occur the treatment should be continued with occasional interruptions of one or two months for a year or even two years so long as improvement lasts.

Cornick²¹ protests against the use of tuberculins for immunization on account of the non-antigenic split protein content, as well as on account of increasing the amount of tuberculin already in the body.

In a personal communication, Dr. John B. Hawes, who has had a very wide experience in non-pulmonary as well as pulmonary tuberculosis, says: "In genito-urinary tuberculosis, I believe it to be a very potent factor for good (meaning tuberculin); in fact, I have a great many patients with bilateral renal tuberculosis or with one kidney removed and the remainder tuberculous, who, I believe, would not be alive were it not for tuberculin given regularly. In glandular tuberculosis it plays a part but by no means so large a part as it does in genito-urinary forms. In patients who are well nourished and strong and healthy in every way, who have had all possible foci or infection in teeth, tonsils, or elsewhere, removed, and who still have masses of tuberculous glands, I have seen tuberculin literally accomplish wonders and these glands melt away as if touched by a magician's wand. In puny, poorly nourished and anæmic children, or in adults too for that matter, tuberculin is of little use except as a psychotherapeutic agent. Surgery must still play a part in such cases, although this part will, I believe, be a more and more conservative one than in the past." Hawes further says: "My first and foremost criterion in regard to its use is that use must do no harm. In lung cases I do not use it at all, nor will I

use it until I have a sanatorium of my own where my patients can be under constant supervision at all times. Under no other circumstances will I use tuberculin for treatment in pulmonary tuberculosis."

Hastings²² has seen two cases of laryngeal tuberculosis develop in patients treated with tuberculin. These cases did not, however, progress beyond the stage of infiltration. Eight cases in which B.F. and B.E. were used are reported in detail; of these, five patients are living and three are dead.

In a personal communication, Dr. A. G. Shortle says: "After twelve years' experience with tuberculin, I am confident that a fair number of cases have been benefited by its use and I think practically none of them has been hurt, for I am above all else careful in the use of this agent."

Thompson²³ protests against this agent in treatment on the grounds that the substance thrown off at the site of the tuberculous infection is tuberculin, and that it would not in his opinion seem judicious to administer tuberculin when the system is already over-tuberculinized.

I had the privilege of examining a case at intervals who had, besides the pulmonary infection, an infection in the anterior cervical glands. This case was being treated by Sanborn of Boston with tuberculin and the result was surely as expressive as in those cases seen by Hawes. It is no exaggeration to say that the gland was swollen to the size of a large hen's egg and after a quite long treatment this tumor so diminished that it could hardly be felt.

I also saw a pulmonary case complicated with tuberculosis of the eye which Jack of Boston saw in consultation. With ordinary hygienic treatment and local applications, dilation and rest to the eye, Jack advised the use of bovine tuberculin. After a few months' treatment the eye condition was cured, the lungs improved, and I discontinued the tuberculin treatment. This case was treated while I was on service at the Rutland State Sanatorium in 1910, and is still doing well.

Lloyd²⁴ has a series of 500 cases in which he has used tuberculin with a number of good results and practically no bad results.

During the last eight years I have treated over one hundred cases of tuberculosis with tuberculin. I used the Bacillen Emulsion and started with an initial dose as a rule of one one-millionth of a milligram and cautiously increased according to the symptoms of the case, giving the treatments twice a week and continuing for as long as two years in some cases.

In some of my cases there was a marked improvement and in others no improvement was manifest. A few cases were complicated by tuberculous adenitis and these cases improved slightly. There were a few cases with slight lung involvement but apparently

very poor resistance, and these showed good improvement. One very remarkable case was that of a young man who entered my service at the Rutland State Sanatorium weighing 75 pounds and who had an appendix which had ruptured before operation and which showed tubercle bacilli in the discharge. This case was advanced on admission and his life was despaired of; he was treated with tuberculin and left the institution an arrested case, weighing 150 pounds, and the appendiceal sinus was thoroughly healed.

I recently treated a case which had received a maximum dose of tuberculin (Koch's Old) of 46 milligrams under the direction of the late Dr. David Butler. This case showed toxic symptoms and a renewal of the inflammation in the lungs.

DISCUSSION

If we accept Weigert's and Ehrlich's theories, tuberculin is a logical treatment for tuberculous infections, providing the reactivity of the patient has not been overcome by a profound poisoning from his own lesion.

We realize that the artificial production of tuberculin by growing the bacilli as saprophytes gives us a tuberculin which is very much different in its antigenic properties from the tuberculin thrown off at the site of the lesion in the body. Consequently an effort to treat tuberculosis with living bacilli would be logical if we can overcome the dangers of such treatments.

If we can judge correctly from different reports, tuberculin treatments are more efficacious in glandular, bone or localized tuberculous infections, than in pulmonary tuberculosis; this may be due to the fact that mobilized antibodies are less able to penetrate the pulmonary lesions.

CONCLUSIONS

1. Tuberculin should not be given to patients with pulmonary tuberculosis by the general practitioner.

2. All other methods of treatment should be tried before the patient is given tuberculin.

3. The patient taking tuberculin should be under absolute supervision and preferably in a sanatorium.

4. Graduated exercise will probably autoinoculate with a tuberculin of more suitable antigenic properties than could be obtained by artificial tuberculin administrations.

5. The tuberculin to be preferred is the one which contains both exotoxins and endotoxins.

6. The initial dose should be very small and the increase in dose and the length of time of treatment are factors to be governed by the course of the case.*

* The details of tuberculin treatment are thoroughly reviewed by Hamman and Wollman: *Tuberculin in Diagnosis and Treatment*. Appleton, N. Y., 1912.

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CLINICAL PROGRESS IN OBSTETRICS*

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In considering the subject of clinical progress in obstetrics, I have chosen an arbitrary period of fifteen years.

The topic divides itself naturally into three phases: pregnancy, labor, the puerperium.

PREGNANCY

Prenatal work is no longer left wholly in the hands of the individual physician. It has become a social interest and obligation. Note the pamphlets published by the Department of Labor at Washington, and, more recently, the admirable letters to pregnant women compiled by the State Department of Health of Massachusetts.

What changes may we expect to find as a result of the increasing prenatal work of the past few years? We think first of *Eclampsia*. Has there been any material decrease in this most dreaded complication of pregnancy and labor? To answer this question from the experience of the New England Hospital for Women and Children, I have looked up the record of cases in the past fifteen years, and tabulated them in percentages of the total number of confinements during that period.

In the five years from October 1, 1902, to October 1, 1907, eclampsia occurred in 1.2 per cent. of all cases. During the next five years, 1907 to 1912, it occurred in 0.9 per cent. In the last five years, ending October 1, 1917 (the period when we should *expect* to see the results of prenatal work), it has occurred in only 0.3 per cent. of all cases. This means a reduction of 75 per cent. — that is, eclampsia has appeared in just one fourth the number of cases, in proportion to the total number of deliveries, that it did in the first five years of this group.

We cannot claim that improvement in our own prenatal work is solely responsible for this really remarkable change, for eclampsia is essentially an emergency condition, and the comparatively large number of cases in the earlier period were sent us for the most part by outside physicians, and were not previously upon our books. No, we feel that it is but a sign of the benefit to the community of the more widespread teaching of hygiene and preventive measures during pregnancy. And as yet we see but the beginning, for, in spite of this marked reduction of cases of actual eclampsia, in spite of the increasing

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number of women who apply to us for treatment during the latter weeks of pregnancy, it is appalling to note, in looking over the causes of still births for the past five years, the proportion due to toxæmia of pregnancy as manifested by grave albuminuria on the part of the mother, — over 15 per cent. of the total still births of that period. We see it particularly in the cases of macerated foetus, 25 per cent. of which occurred in this condition.

Too many women still seek advice from physicians and hospitals only late in pregnancy, frequently when the damage to the foetus has already occurred.

We have been accustomed to think of syphilis as the most potent factor in causing premature and still births. For the past two years at the New England Hospital for Women and Children we have made a practice of taking blood from the placental end of the umbilical cord at delivery to test for the Wassermann reaction. In this study the State Laboratory has rendered us invaluable aid. A comparison of the cases of still births showing a positive Wassermann reaction, and those where the mother suffered from albuminuric symptoms, show just one half as many cases in the former as in the latter. In both cases, nearly all were premature, macerated foetus.

In the study of over 1500 cases where we have had the blood tested for the Wassermann reaction, I have been impressed with the small proportion of positive results, — 1.2 per cent. as against 98 per cent. negative and 0.8 per cent. doubtful. In cases at all suspicious we have frequently had a control specimen from the mother's arm.

LABOR

The most marked change that I have noted during this fifteen years' period is the reduction of *operative* deliveries.

Returning to the previous five-year groups, from 1902 to 1907, the operative cases were 9.06 per cent. of the total number of deliveries; from 1907 to 1912, 8.6 per cent., practically no noticeable change; but from 1912 to 1917 we see the remarkable drop to 4.6 per cent., a reduction of over 50 per cent. from the first group.

While more than one cause may have been active in producing this result, the most potent factor is beyond doubt the use of *pituitrin* in the second stage of labor in selected cases. At the New England Hospital for Women and Children its use was begun early in the year 1913, and has been continued ever since. We have found it of inestimable value not only in its most frequent use, to hasten the end of the second stage of normal labor, but especially in occasional cases where the

mother's condition made either voluntary effort or operative procedures inadvisable. For example, a woman came to the hospital one afternoon, complaining of feeling very ill. She was pregnant about 8 months, but had felt no labor pains. She proved to be practically moribund from lobar pneumonia. Vaginal examination showed complete dilatation of the cervix. No pains occurred, and no progress in the advance of the head in the next three hours, so, as she was breathing with the utmost difficulty, two injections of pituitrin were given, with the result that a small, but healthy, infant was expelled with practically no effort on the part of the mother.

Again, a patient in advanced stage of pulmonary tuberculosis, with copious hæmoptysis, was referred to us at full term of her first pregnancy. She was unable to breathe in except the sitting posture, and could not speak above a whisper. Labor occurred spontaneously a few days after admission to the hospital. She stood the first stage well, but was, of course, unable to make the slightest voluntary effort during the expulsive stage. The head reached the pelvic floor, and then all progress stopped; the pains became weak, ineffective, and at longer and longer intervals. One injection of pituitrin was given; the first contraction appeared in six minutes, and at the end of six minutes more a large, vigorous child was expelled. This result seemed little short of miraculous, even to those of us who had been well accustomed to the use of the drug. (It may be interesting to note that immediately following labor the patient's condition improved rapidly, so that she was able to return to her home and assume her household duties for a time, though I understand that she died not many months later.)

The use of *scopolamin-morphin* in labor I shall touch upon but briefly. We use it by two different methods, according to the effect desired:

- (1) To produce amnesia.

- (2) To quiet restlessness, give sleep between pains and shorten labor.

The first of these methods I shall leave to my colleagues to discuss, as my personal experience has so far led me to prefer the second. During the winter of 1911-1912, I used the drugs in a small series of cases, about 25 in all, or about 15 per cent. of the total deliveries in my service that year. I was perhaps over-cautious in my selection of cases, for although we had used *scopolamin-morphin* anæsthesia extensively in our surgical wards for the previous three years (as we have continued to use it now for over nine years), its use at that time in obstetrics was still comparatively new in this country, as it had not then reached the ears of the public through the medium of the

popular press. In this series we gave an initial dose of scopolamin gr. 1/125, morphin gr. 1/6, usually one dose only; if repeated the morphin was reduced to 1/12 grain and the scopolamin to 1/200. The full effect was generally manifested in about twenty-five minutes. In many cases the change from loud outcries, tossing about the bed, and groaning throughout the intervals between pains, to quiet sleep except at the height of a contraction, was almost marvellous. Perhaps the most evident effect of this method of administering the drugs was on the relative rapidity of dilatation, compared with the progress of the respective case before the injection. In over half of the cases delivery was distinctly hastened, from softening and relaxation of both cervix and perineum. No ill effects were noted in the third stage, the loss of blood being slightly less than in the control cases without the drugs. As to the infant, we could discern no effect when the drugs were given at least four hours before delivery. In one or two cases where less time elapsed the child required slapping or immersion in hot and cold water before a satisfactory cry was elicited. This is probably explained by the fact that opium, acting as a direct poison to the respiratory centre, is harmless to the foetus *in utero*, and becomes dangerous only at birth, when the infant must make respiratory efforts. If delivery occurs when the effect of the morphin in the mother's circulation is at its height, there is danger that the child will be too drowsy to cry and properly to expand its lungs. In no case in this series was the foetal heart affected either before or after delivery.

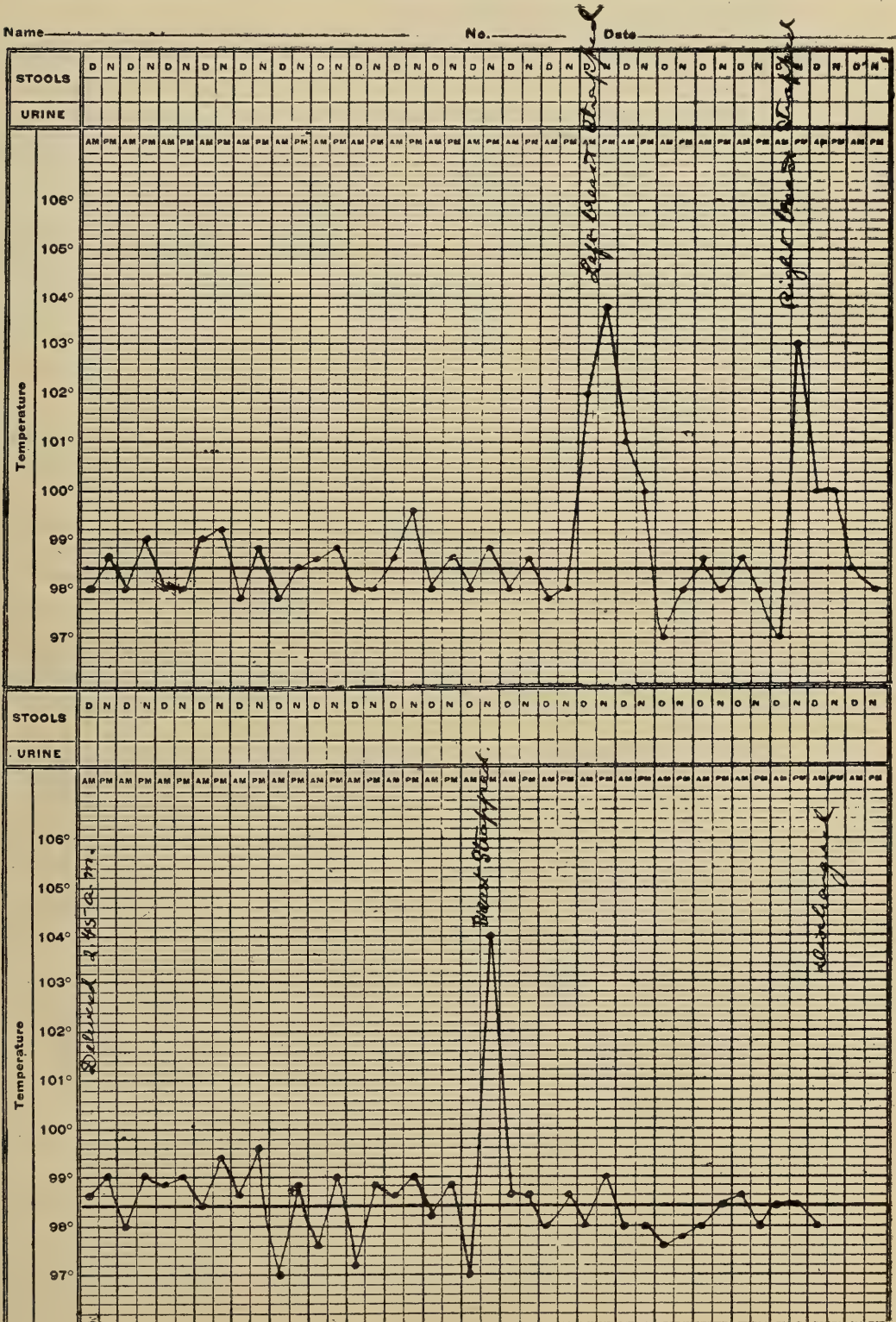
Since this first series I have continued to use the method, with slight modifications, in such cases as it seems likely to be of benefit, or where the mother desires it, and no contraindications exist. But, in point of fact, in our experience, comparatively few patients express any wish for it. As far as the advantage of producing amnesia is concerned, the average woman has the fortunate ability to forget the agony of her labor in the relief and joy of hearing her child's first cry, and all of us are familiar with the expression, "Why, it wasn't so bad after all," when the mother has been taken to her room and rested quietly a few hours.

I feel that the drugs are valuable, but must be used with caution, and that they are distinctly hospital accessories to labor, and ill-suited for the average case in a private house.

PUERPERIUM

What advance has been made in the after-care of puerperal women? In my own hospital experience I think the greatest improvement is in the prevention of suppurative mastitis

by early and careful strapping of the breast with zinc oxid adhesive plaster. To be effective it must be done at the first



sign of redness, pain or rise of temperature. A study of the accompanying temperature charts in cases thus aborted is certainly illuminating. The sudden drop from 103 or 104 degrees to

normal, following the application, must be seen to be appreciated, and to my mind is convincing proof that without this remedy abscess would have been unavoidable.

Again the attention paid, in recent years, to *posture* during the lying-in period has wrought a great change in the number of cases of retroflexion of the uterus. We allow our patients to remain in the dorsal position the first 48 hours, but after that time encourage them to lie on one side or the other, with the hips thrown well over, almost in the Sim's position. If the breasts are not uncomfortable, they may lie directly on the face. We examine all our patients early in the third week, thus allowing time for treatment for the correction of any displacements that *may* occur, before the patient leaves, which in normal cases, is at the end of the third week, but careful attention to this matter of posture while the patient is in bed, and the uterus still large and heavy, has reduced such cases to a minimum.

BABIES

Any discussion of maternity work would be incomplete if no mention were made of the babies. It would lead us too far afield even to touch upon the subject of infant welfare work, but limiting the study to the first three weeks of life, while the child is still in the hospital, or under the care of the physician, several changes of the past few years occur to us.

Our premature infants are no longer kept in a glass-topped incubator, but, protected by the premature jacket of gauze and absorbent cotton, are permitted from the first to breathe the air of a sunny, well-ventilated nursery.

Our full-term babies in mild weather sleep many hours on the piazza, upon which each nursery opens.

The time-honored schedule whereby a child was taken to the breast every two hours by day and every four hours at night is a thing of the past,—the infants thriving quite as satisfactorily with three-hour intervals during the day, and no feeding between ten o'clock in the evening and five in the morning,—a change of marked benefit to the mothers, who thus are enabled to have seven hours of uninterrupted sleep.

Of the disorders of early infancy, one in particular is held in dread,—hæmorrhagic disease of the new-born. For years we treated this condition with sedatives, with gelatin solution and with calcium lactate; then came rabbit serum and later still coagulose. Cases recovered, but it was hard to say whether individual ones did so because of the remedies employed, or whether they chanced to run a less unfavorable course than others. The last two or three years, however, show a distinct

improvement in the mortality since the use of hypodermic injection of fresh blood from the infant's father.

In closing I would speak of the great necessity in hospital practice of immediate removal from the nurseries of any infant presenting a suppurative lesion, however trivial in appearance, — paronychia, tiny pustules anywhere on the skin, purulent nasal secretion, mild conjunctivitis; most especially should even one pustule resembling pemphigus appear. All such infants should be entirely separated from healthy babies, and be cared for by special nurses. I am convinced that only by the rigid carrying out of this rule can we prevent the occasional outbreaks of pemphigus neonatorum, Ritter's disease, and impetigo.

EDITORIAL

BOOKS for review, exchanges and contributions — the latter to be contributed to the GAZETTE only and preferably to be typewritten — subscriptions and all communications relating to advertising and other business should be sent to THE NEW ENGLAND MEDICAL GAZETTE, 80 East Concord Street, Boston. Make checks payable to THE NEW ENGLAND MEDICAL GAZETTE.

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ANTITYPHOID INOCULATION AND TUBERCULOSIS

In the August, 1917, *Homœopathic Recorder*, the leading editorial discussed at some length the modern methods of active immunization against infectious diseases. The burden of the *Recorder's* argument was that diminution in morbidity rates may be more justly attributed to advances in sanitation than to immunization.

The GAZETTE in the December number offered refutative evidence. In the January *Recorder* there appears a reprint of our editorial with the following remarks:

"*The New England Medical Gazette* reproaches the *Recorder* for its disbelief in the value of protective inoculation against typhoid fever. As this Journal seeks to be fair to all men and on all subjects, we hereby quote the *Gazette's* editorial in full, as it is possibly as good a presentation of the affirmative as could be made." . . . "Perhaps the *Recorder* is not rational in the laboratory sense, but is there not a higher rationality? Humanity instinctively shrinks from all forms of inoculation, and instinct is not to be lightly brushed aside. Also, philosophically, there is no action without reaction. What is the reaction, the secondary and lasting one of this inoculation? Quite recently it was reported that there were 700 000 cases of tuberculosis on the Western battlefront. Think it over, Brother *Gazette*."

From these remarks we infer, probably erroneously, that the *Recorder* admits the importance of the records we cited showing that in 1898 there were ten times as many cases of dysentery and diarrhœa as in 1916; but there were TWENTY-FOUR HUNDRED times as many cases of typhoid. Because of their common epi-

demiological characteristics, there would have resulted coequal diminution in the number of cases of these three diseases had improved sanitation been the sole cause. Some other explanation must be sought. Really, now, is it illogical to attribute significance to the facts that routine antityphoid inoculation was introduced previous to 1916, but that the obstacles to similar immunologic prophylaxis of dysentery and diarrhoea have not yet been overcome?

However, the *Recorder* may have intentionally left this point in abeyance, deeming it to be of minor import as compared with the "secondary and lasting [harmful] reaction" to antityphoid inoculation. It quite transcends our powers of divination to extract from the *Recorder's* guarded remarks any clear definition of just what constitutes the main issue, but a sense of justice to the subject as a whole leads us to waive this formality of debate.

Before proceeding to the main question we wish to enter a brief protest against the subordination of reason to instinct. On the one hand we have the *Recorder's* remotely pertinent opinion that "Humanity instinctively shrinks from all forms of inoculation." On the other hand we have the documented fact that 98 per cent. of the English soldiers have *voluntarily* been inoculated.

"What is the reaction, the secondary and lasting one, of this inoculation?" The *Recorder's* suggestion that we "think it over" fortunately fell into one of the few fertile crevices of our cerebrating mechanism. We gather, by inescapable implication from its remarks, that the *Recorder* is under the impression that the extraordinary number of cases of tuberculosis on the Western battle-front is due to antityphoid inoculation, but it offers absolutely no substantiating evidence.

It is quite generally agreed that by far the larger part of the increase in tuberculosis is in the French population and not among the other Allies.¹ Concerning this increase there can be no reasonable doubt, although Major Rist, of the French Army Medical Corps, asserts that the facts regarding the increase of tuberculosis among the soldiers do not agree with the exaggerated statements published in America.² Is it, however, due to antityphoid inoculation? We offer the following data for consideration.

1. During the siege of Paris in 1870-1871, incidentally before the typhoid bacillus was discovered, there was an enormous increase in mortality and morbidity from tuberculosis.³

2. France has, unfortunately, been among the most backward of nations in her attention to tuberculous problems. Before the war, her death rate was three times as great as England's. French ventilation of houses, especially of sleeping quarters, the French tax on windows, and their habit of promiscuous expectoration have long been notorious examples of poor hygiene and sanitation. Even now tuberculosis is not a notifiable disease in France. Further-

more, Biggs, investigating for the Rockefeller Foundation, reports that in the civil population, among whom antityphoid inoculation has certainly not been practised with the thoroughness that it has in the military, the incidence of tuberculosis is much greater since the beginning of the war than it was previously.⁴

3. The circumstances which necessitated the immediate and hurried mobilization of the French troops at the beginning of this war afforded no opportunity for careful examination of soldiers for the purpose of excluding the tuberculous. Consequently, the recruiting of tuberculous individuals has been far in excess of the limits of safety, with respect either to individual health or to generalized contagion. We do not think it an unreasonable belief that the soldier's life, quite aside from antityphoid inoculation, tends much more strongly to light up existing tuberculous processes than does the average civilian's life.

4. Colonel Russell,⁵ of the Medical Corps of the United States Army, has quoted figures from the annual report of the Surgeon-General of the War Department, showing that since the introduction of antityphoid inoculation tuberculosis has actually decreased. Compulsory inoculation was begun in 1911. The case-rate for tuberculosis averaged 4.51 per thousand for the decade ending with 1911. The case-rate for 1912 was 22 per cent. lower or 3.49 per thousand. This comparison, however, is not quite fair, because during the early years of this decade sanitation was not so good and there was less careful physical examination of recruits for the purpose of excluding the tuberculous. However, the case-rates for 1909, 1910 and 1911 are all higher than for 1912.

5. It has not been shown experimentally that typhoid vaccin hastens the death of actively tuberculous animals or that animals immunized with typhoid vaccin have a lessened resistance to subsequent infection with tubercle bacilli. In fact, exactly opposite findings have been reported.⁶ Guinea-pigs that were actively tuberculous when given typhoid vaccin and those infected after receiving typhoid inoculation appeared to develop a distinctly increased resistance to tuberculosis, as shown by considerably greater length of life, by superior nutrition and by the fact that, in the majority of cases, those animals that received typhoid injections showed changes resembling fibrous tuberculosis, which indicates increased resistance. The control animals showed the usual type of active tuberculosis, necrosis and extensive caseation with relatively little fibroid change.

We have no doubt that antityphoid inoculation may possibly be dangerous when performed on the actively tuberculous; "aggravation" from homœopathic drugs, exercise and any other measure that excites a febrile reaction are also to be avoided.

We wish to call attention to the directions for vaccination against typhoid fever, issued by the United States War Department, in which it is specifically stated that no person should be vaccinated who is not perfectly healthy, *and free from fever*.

The unintelligent use of any prophylactic or therapeutic method always brings it into more or less disrepute, but how much weight is to be attached to rumors that Bill Smith knows of a case who underwent a recrudescence of cough and fever, or that one of Josh Brown's patients had an attack of hæmoptysis *following* antityphoid inoculation?

We feel that the tasks of demonstrating that antityphoid inoculation has usurped credit belonging to perfected sanitation, and that it is the cause of increase in the incidence of tuberculosis, are distinctly up to the critics who have made those stark assertions. *Post hoc ergo propter hoc*. Why not attribute the growing prevalence of tuberculosis to the movies or the use of safety razors? Both have developed almost synchronously with antityphoid inoculation.

Further comment on this subject will be found in this issue on page 160.

S. B. H.

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THE PRICE OF SUCCESS

At the time of graduation every physician looks forward to a more or less brilliant career that he has planned for himself. Usually he is going into general practice for a time, during which he will carefully study each case that comes under his observation and keep complete records. He will subscribe for the leading journals and buy the latest books. He will affiliate himself with the medical societies and attend regularly. He will undertake some definite research work. After acquiring the needed experience and accumulating the necessary funds he will take postgraduate work to fit himself for a specialty

and then locate in a large city and limit his practice to the chosen field.

A few physicians attain the early ideal; a very limited number go beyond it, but the vast majority soon settle down under the routine of practice and never attain the place that had been pictured. There are many reasons for this. When the physician gets out in the community in which he is to practice, many things confront him of which he had not thought. Time must be spent in getting acquainted, for no matter how capable a physician he may be, if the people do not know him they will not call him. He finds that one patient sends others, and he is afraid to leave to attend medical meetings for fear, while gone, he might lose a patient that would prove to be very influential, and, further, he reasons that if he stays home while the older men go he will get some of their practice. He cannot do the reading that he had planned, for he cannot afford to subscribe for the list of journals he thinks he needs, or buy the books he wishes. He does not start the investigations he had purposed, for it costs money to do research work.

Therefore, instead of starting upon the program that is to prepare him for the place in life that he feels is his, he postpones it to some future date, and as time passes it becomes more difficult for him to start. Though the lodges he has joined, and the social functions to which he is invited, added to a growing practice, he finds the demands upon his time constantly increasing. Cases in families to which he has become endeared keep him at home more closely. The growing demands for money and the desire to accumulate something for a rainy day cause him to feel that he had better wait before putting the needed money into the postgraduate trip. He hasn't the time for reading other than what is required for cases in hand, and he has either gotten out of touch with research work or he does not feel that he can undertake it until he has had an opportunity to brush up and familiarize himself with the newer methods that have come out since he was a student.

Some getting into this state realize where they are drifting and throw off the spell, but the majority continue in the same rut until it is too late. Suddenly the physician realizes that he has gotten along in years and a young, progressive man has come in, and the very families for which he has stayed home and slaved in order to be present when needed have deserted and gone to the younger man. He now realizes his great need for postgraduate work, but it is too late. His mind is not flexible as it used to be. The medical sciences have made such great advances and the new ideas are so different from the ones that he was taught that at best he can only get a hazy view of some of the newer teachings.

What is the difference between this type of physician to which

so many belong and men like Koch, Pasteur, Murphy, and others who at the time of their death were the idols of the medical profession and whose names will appear in the literature for long years to come? Is it that at the time of graduation the former group were poorer students and were in more straightened circumstances? No, for the famous men very frequently did not make the best records as students, and often had to work their own way through. Success in the life of a physician depends to a greater extent upon how the spare time is used in the first few years of practice than upon any other one factor. Many who were very poor students have become famous men because they have realized this fact. The young physician who utilizes a certain amount of time for self-improvement from the very start, who attends the medical societies regardless of the obstacles, who interests himself in research problems and is constantly carrying on some investigation is the one who succeeds. His ability to reason develops with age. Through his reading he keeps in touch with the newer developments as they occur, so that he never awakens to find that he is in a labyrinth from which he cannot extricate himself. To repeat, the big difference between the great physician whom we love to quote and his class-mate, to whom the younger physicians refer as "an old man who doesn't count," lay mainly in the way the time of the first years was utilized. To a greater or less extent the majority of the younger physicians and some of the older ones who realize that they are missing the bigger things, can make atonement, but no physician who has wasted time can reach the place that he might have occupied had that time not been wasted.

J. E. E., in the Medical Sentinel.

CLINICAL DEPARTMENT

**THE VALUE OF THE WASSERMANN TEST IN PREGNANCY
AND OF INTENSIVE ANTISYPHILITIC TREATMENT
TO INSURE BIRTH OF A LIVING CHILD**

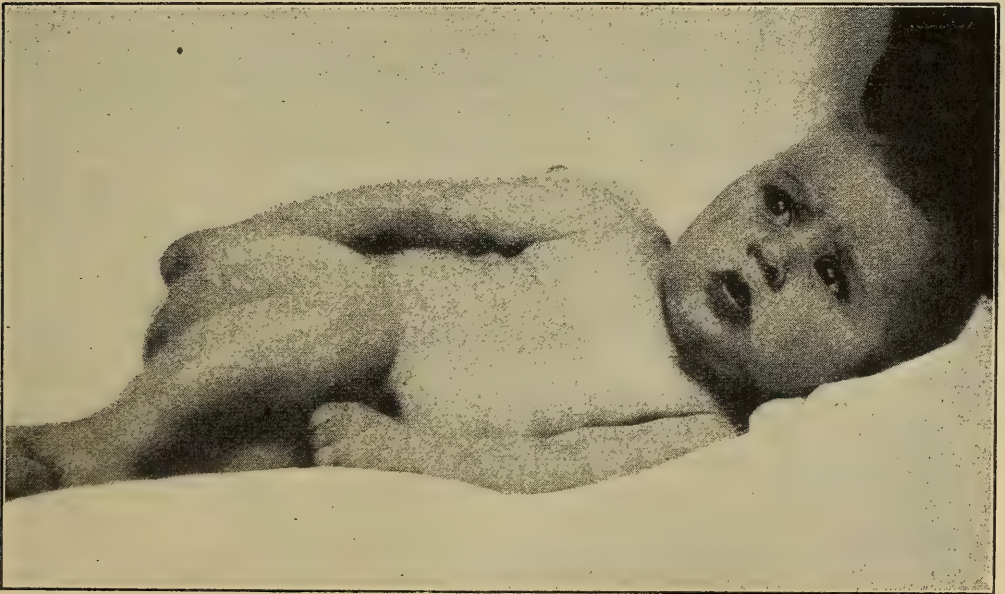
(Case reported by E. P. RUGGLES, M.D., before the Boston District Homœopathic Medical Society.)

January 26, 1917, a young woman, five months pregnant, applied for treatment during her confinement. She gave the following history: Age 22, married at 15, pregnant for the eighth time. During the first five months after marriage she had a pustular eruption over the entire body, but could not remember an initial luetic lesion. About five months after marriage she became pregnant for the first time, miscarrying between the fifth and sixth months; the child was macerated. During this year she was under the care of two physicians. Her second pregnancy resulted in an early abortion, not induced. During the third pregnancy, she had some flowing and miscarried at six months; the foetus was not macerated. The fourth pregnancy terminated in premature still-birth in seven months: the physician in attendance at this time suggested that she ought to have some special treatment; but this was not carried out. The fifth pregnancy resulted in miscarriage between the sixth and seventh months; the foetus was not macerated. The sixth pregnancy continued somewhat longer, premature delivery of a macerated foetus occurring at about the seventh month. After this confinement the attending physician took a small sample of blood from her finger and reported that it was all right. The seventh pregnancy was an early abortion, probably induced, after which she was curetted.

Examination February 1, 1917, showed a short, well-developed, rather pale woman. She had a few small, circular, flattened scars on the anterior portion of the legs, but no other physical signs suggesting luetic infection. Her only symptoms were slight dizziness and some headache. She was pregnant. Her last menstrual flow had occurred August 2, 1916. Motion was noticed early — the first week in December. There had been a slight show of blood at the third month. Heart sounds were audible. Pregnancy was in the fifth month. The Wassermann test showed that her blood serum gave a strong positive reaction with alcoholic extract antigen as well as with cholesterol reënforced antigen. She was very desirous of having a living child, but was much worried because she felt much the same as she had before the other miscarriages. When asked to describe this feeling she could only say that there was not as much life and that she felt somewhat sick. She was given one-

fourth grain mercurous iodid (protoiodid) and increasing doses of potassium iodid three times daily; this, in two weeks, caused cutaneous irritation and was discontinued. Then she received three intravenous injections of neo-salvarsan at weekly intervals, the successive doses being 0.6 gm., 0.75 gm. and 0.9 gm. of the drug dissolved in 50 cc. doubly distilled sterile water. Before the last injection, March 3, 1917, blood was taken which showed a weak positive Wassermann reaction. Between March 17 and May 1, 1917, she was given intragluteally eleven injections of 0.5–0.75 cc. of a 2 per cent. solution of mercuric benzoate.

On May 24, she was confined at the Robinson Maternity Department of the Massachusetts Homœopathic Hospital and gave birth to an apparently healthy male child weighing slightly over seven pounds. Labor was delayed somewhat during the first stage of dilatation; recovery was normal, except for slightly persistent sanguinous lochia. The child showed some jaundice between the third and eighth days, for which *mercurius vivus* was given. At the time of birth, blood was taken from the placental end of the cord and gave a negative Wassermann test. The child was well developed and apparently perfectly well, and at the time this is written shows no signs of disease. The accompanying reproduction is from a photograph taken when the child was four months old. The mother is nursing the child and she, too, is apparently well, except for some headache.



The examination of the blood will determine further treatment of both mother and child.

It is important to bear in mind that the child must be treated independently; because as was found separately by Baisch¹,

Bar² and Ascheim³, the quantity of antisyphilitic drug (or, possibly, immune body) excreted in the milk is not sufficient to prevent development or progress of syphilis in the nursing infant of an intensively treated mother.

For diagnosing syphilis the Wassermann reaction is the best method at our command. The prevalence of the disease must not be forgotten: of 4 000 patients admitted to the Peter Bent Brigham Hospital of Boston, 15 per cent. gave positive tests. A positive Wassermann reaction in either parent is sufficient cause for continued investigation and treatment; it must be stated, however, that during eclampsia and in the early puerperium, a pregnant woman may give a weakly positive test. Evidence of syphilis in the absence of a positive test should not be neglected.

Heinemann⁴ believes that between eighty and ninety per cent. of macerated foetus are syphilitic: sixty per cent. of premature labors, excluding cases due to eclampsia and placenta prævia, are the result of syphilis; twenty per cent. of habitual abortions are due to this disease. In the absence of positive blood tests in mother or child the tissue of all macerated infants, particularly the umbilical cord, the proximal portions of the umbilical veins, the liver, suprarenals, and the placenta, should be thoroughly examined for treponemata.

Treatment should begin as soon as the diagnosis is made or suspected, and it should be *adequate*. Salvarsan or one of its substitutes intravenously and a course of mercury intramuscularly (the benzoate recommended by Thompson is, perhaps, best) should be used alternately. Temporary unfavorable effects upon the mother from the intravenous injections of salvarsan are not rare, and in some cases the course of pregnancy has been interrupted, but whether from the remedy or disease is difficult to determine. Salvarsan is most useful when during pregnancy symptoms of recent syphilis develop, and then the remedy acts promptly and efficiently. The percentage of living children born after salvarsan treatment is stated to be 92, while after mercurial treatment but 74.6 per cent. are said to be viable. If syphilis is suspected, it seems best to use salvarsan as soon as possible after the beginning of pregnancy to prevent severe visceral lesions.

My experience with syphilitic pregnant women has taught me the following:

1. A Wassermann test should be made in every case of abortion or miscarriage; and syphilis should be thought of first as a possible cause of these accidents.
2. A Wassermann test should be a routine obstetrical procedure.
3. A properly obtained Wassermann reaction, except in some

rare (mostly tropical) conditions, is a positive and infallible sign of syphilis.

4. If a Wassermann reaction does not harmonize with the clinical features, or in case of a weak or doubtful reaction, it should be repeated.

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HOMŒOPATHIC PERIODICAL LITERATURE

The North American Journal of Homœopathy. December, 1917

1. *What is homœopathy?* 634. Dienst, G. E.
2. *The coming scarcity of physicians.* 640. Holmes, B.
3. *Small puncture wounds.* 647. Hingston, J. W.

Revista de Homeopatía Practica, Barcelona. May, 1917

4. *Allium sativum.* 151. Olivé, A.

The following symptoms may be relieved by allium sativum: cough; viscid mucus; sibilant rales which do not disappear after coughing and expectorating.

5. *Enfermedad bronceada de Addison.* (Addison's disease.) 158. Vinyals, M.

V. reports a case of Addison's disease he claims to have cured by giving chelidonium and soluble mercury.

June, 1917

6. *Qué es la enfermedad?* (What is disease?) 171. Olivé, A.
7. *Isopatía.* (Isopathy.) 176. Pellicer, J.

P. reports a case of smallpox he treated with variolinum, assisted by aconite to modify the intensity of the fever, soluble mercury during the stage of suppuration, hepar sulphur during the stage of resolution, and thuja occidentalis to prevent scar formation.

8. *Valor clínico de una alternancia medicamentosa.* (Clinical value of alternating medication.) 179. Bertran, J.

Belladonna and soluble mercury in alternation are very useful in puerperal metritis and adenitis and in appendicitis.

9. *Fiebre de Malta y su tratamiento homeopático.* (Malta fever and its homœopathic treatment.) 183. Olivé, A., and Gros.

This is a discussion of the general hygienic, dietetic, serum, vaccin and drug treatment of Malta fever. *Helianthus* is recommended.

10. *Baptisinum*. 199. Santonja, J.

11. *Neurastenia*. 202. Vinyals, A.

V. describes several varieties of neurasthenia and lists the following drugs for its treatment: *anacardium*, *alumina*, *argentum nitricum*, *cobaltum*, *cocculus*, *cyclamen*, *kali phosphoricum*, *magnesia carbonica*, *natrum muriaticum*, *acidum phosphoricum*, *phosphorus*, *acidum picricum*, *silica*, *zincum*.

July, 1917

12. *Agua minero-medicinales y Balnearios*. (Medicinal mineral waters of Spain.) 219. Olivé, A.

13. *Purpura quinica*. 227. Mesquer, A.

Several cases of quinin purpura were helped by *ippecacuanha*.

14. *Hyperhidrosis locales*. (Homœopathic treatment of local hyperidrosis.) 234. Moragas, V.

Not only homœopathic but also hygienic treatment and local applications for hyperidrosis are discussed.

15. *La Disenteria*. (Dysentery.) 240. Furest, M.

The two most useful remedies in the treatment of dysentery are *colocynth* and *mercurius corrosivus*, the former when there are colic and bloodless stools, the latter when the stools are bloody.

16. *Contribucion al estudio de la tabes dorsal*. (Tabes dorsalis.) 261. Andren, B.

Homœopathic pharmacotherapy has not been successful in *tabes dorsalis*.

August, 1917

17. *Viruela y cloruremia*. (Smallpox and œdema.) 265. Suriol, A.

This is an interesting case report of *anasarca* following smallpox; elimination of table salt from the diet caused disappearance of the œdematous swelling.

18. *Pulsatilla*. — *Sepia*. 268. Olivé, A.

Symptom-similarity of several groups of remedies exists. In the *pulsatilla* group fall *silica*, *graphites*, *calcareo carbonica*, *phosphorus* and *hepar sulphur*; the *sepia* group includes *copaiba* and *alumina*.

19. *Acetonuria*. 272. Galard, J.

20. *Glucosurias toxicas*. (Toxic glycosurias.) 290. Cartier.

Rivista Omiopatica e L'Omiopatia in Italia. May-August, 1917

21. *La natura favorevole dei sintomi*. (The favorable nature of symptoms.) 35. Secondary, G.

In order to prescribe rationally we must know whether symptoms are beneficial or detrimental to the body; only if they are harmful should we attempt to remove them.

Disease is a battle fought within the body: on the one side is the pathogenic agent, on the opposing side the body's reaction expressing itself in symptoms. Fever, for instance, is part of a reaction against bacterial infection, and its height is an index of the body's power of resistance; in the young and vigorous fever tends to be high, in the old and debilitated it is comparatively low. From this it is evident that administration of antipyretics is doubly harmful, because not only is a beneficial symptom removed but the body is required to combat the antipyretic.

Other salutary symptoms are cough, necessary for clearing air passages of mucus; rapid respiration, which supplies additional oxygen; pleuritic pain, which compels the patient to limit respiratory motion and thus prevents spreading of pleural infection; thirst, calling for water to dilute toxins and promote their elimination *via* kidney, skin and lungs; diarrhoea, which removes toxic material from intestines and also from the blood.

The administration of drugs for their homœopathic action assists the body in its attempt to combat disease because the production of beneficial symptoms is augmented rather than retarded.

The Journal of the American Institute of Homœopathy. September, 1917

22. *Pellagra: present status and early recognition.* 229. Dearborn, F. M.

23. *Homœopathy in the prophylaxis and treatment of scarlet fever.* 235. Wesselhoeft, C. Published in the *N. Eng. Med. Gaz.*, 1917, lii, 461.

24. *Health of the new army.* 250. Bispham, W. N.

25. *Cancer: cumulative evidence of the extrinsic origin: convincing evidence that mineral starvation is a predisposing cause.* 253. Packard, H.

26. *Inguinal hernia: operation with special reference to the use of local anæsthesia.* 268. Kelley, F. A.

27. *The Bergonie apparatus and its use.* 271. King, W. H.

28. *The intrinsic value of the homœopathic 'materia medica.'* 277. Guernsey, J. C.

29. *The logic of infinitesimals.* 290. Patch, F. W.

The author finds no evidence that we are any nearer a definite solution of the potency problem, but greater tolerance

of new thought and a more intelligent interest in our work and the work of others is hopeful for the future.

October, 1917

30. *Hydatid cyst of the liver.* 431. Allen, H. C.

31. *Pulsatilla, radium and rhus tox: a comparison of modalities.* 434. Rabe, R. F.

32. *Progressive homœopathy.* 439. Askenstedt, F. C.

A. rightly believes that the time has passed when we should continue to regard Hahnemann as an ideal and infallible master. Homœopathy has outgrown its infantile character of indiscriminately matching drug symptoms with disease symptoms. A broader view of the principle *similia similibus curentur*, in accord with the growth in knowledge of the collateral sciences of medicine, will greatly facilitate its intelligent use. By correlating all practical experience, homœopathy will grow less vague and mysterious and the relation of cause and effect in therapeutics will assume a more tangible form.

33. *Borderliners.* 450. Sawyer, C. E.

34. *Varicose veins and ulcers.* 454. Wilcox, S. F.

35. *Prenatal care.* 457. Wolcott, E. H.

36. *Labor technic.* 463. Winans, W. W.

37. *Eczema in infants from three months to three years old.* 477. Lee, W. T.

Eczema in infants and children should be relieved by appropriate treatment when possible, as lasting constitutional harm may result from its continuance. The eczemas of early life are not due primarily to bacteria, but microorganisms are frequently complicating factors. An excess of starch or fat in the fæces of infants with eczema can be determined in a large percentage of cases. An eczema due to failure of fat digestion is usually of the moist type; one due to disturbed starch conversion, of the dry variety.

An anaphylaxis to certain food substances is a frequent cause of eczema, and should be suspected in all cases in which no fat or starch disturbances can be determined. In the successful treatment of the eczemas of childhood, the discovery and elimination of the causal factors is of the utmost importance. The regulation of the diet in accordance with the findings in the fæcal examinations and cutaneous skin tests usually result in the relief of the eczematous manifestations. Internal medication is important, but should be used only when definitely indicated. Mild protective applications are usually sufficient in the external treatment of the eczemas of early life.

November, 1917

38. *Homœopathic progress in Brazil.* 549. Dearborn, F. M.

39. *The pharmacology of kalmia latifolia.* 553. Hadley, R. V.

A study of the results obtained demonstrates the fact that the drug kalmia exerts an elective action upon the circulation, and the following conclusions may be drawn concerning its action:

It requires rather moderate doses of the remedy to produce circulatory changes.

The results obtained vary with the size of the dose employed. Kalmia produces primary and secondary effects.

The smallest dose, that produces any effects, causes the following:

A rise in blood pressure, a primary effect, followed by a fall in pressure, a secondary effect.

An increase in the strength of the cardiac impulse (pulse), a primary effect, — followed by a weak, feeble pulse, a secondary effect: a slight increase in the rate of the heart's action.

Larger or toxic doses cause a marked slowing of the heart in diastole, which is perhaps their most noticeable effect.

Since it requires rather moderately large amounts of the drug to produce symptoms, the therapeutic dose may be also somewhat considerable and still be subphysiological in character. In other words, doses of the tincture varying from three to ten or more drops may prove more useful than higher attenuations.

40. *Anæsthesia: A suggestion for a dropping attachment to the commercial chloroform container.* 558. Sommer, H. O.

41. *X-ray examination of the chests of school children in relation to the discovery of pulmonary tuberculosis.* 560. Edmundson, F. B.

42. *The homœopathic surgeon and the gall-bladder.* 566. Burrett, C. A.

43. *Hydatidiform mole and its relation to chorioepithelioma* 572. Danforth, L. L.

44. *Diet in constipation.* 579. Hubbell, E.

45. *The spirit of investigation fundamental to progress: its lack in the homœopathic school.* 582. Mellon, R. R. Published in the *N. Eng. Med. Gaz.*, 1917, lii, 521.

46. *A growing dearth of doctors.* 590. Stevenson, H. M.

47. *Study in the pathogenesis of so-called neurasthenia.* 598. Carpenter, W. B.

December, 1917

48. *The homœopathic prescription.* 643. Howard, E. M.

49. *Correct methods of choosing the indicated remedy.* 648. Coleman, D. E. S.

Correct methods of prescribing necessitate:

A knowledge of homœopathic principles and materia medica; familiarity with characteristic symptoms upon which the bulk of our prescriptions depend; the use of the repertory when the characteristics do not stand out prominently, or when they are unknown or forgotten.

50. *Isopathy, homœopathy and immunity.* 660. Dewey, W. A.

Most of the discussion is on isopathy and immunity. The article is followed by a long discussion on autotherapy by its originator and chief apologist, Dr. Charles H. Duncan.

51. *Enteroptosis.* 676. Upham, R.

52. *The significance of prostatic infections.* 682. Wieland, F.

53. *Salpingitis.* 685. Humphrey, W. A.

54. *Tuberculosis in infants.* 693. Johnston, A.

55. *Modern medical diagnosis: its demands and possibilities,* 698. Tenney, A. C.

Pacific Coast Journal of Homœopathy. January, 1918

56. *Antityphoid inoculation and tuberculosis.* 1. Hawkes, W. J.

The article devotes eighteen pages to a partisan discussion of this and a number of remotely allied questions. The following are the statements which have some degree of pertinence to the title:

1. "Is it necessary, in order to protect our choice and healthiest young men from typhoid fever, that there be injected into their blood a virus — a poison — (they are synonymous terms) taken from a diseased animal?

"There is absolutely no unquestionable evidence in favor of the affirmative of this proposition. The evidence of statements that where antityphoid vaccination has been practised the disease was less prevalent, or altogether absent, is negative, and might, with more logic, be used in favor of the more probable proposition that up-to-date hygienic precautions were the causes of the claimed immunity."

We may agree that there is no *unquestionable* evidence showing that it is necessary to inoculate with vaccin to protect against typhoid fever. There is, however, a tremendous amount of reasonably valid evidence, some of which has been editorially cited in this issue, some of which will be referred to in the later discussion of this article, and some of which may be found in the following references: ¹ ² ³. This evidence may be consulted by those who prefer

¹ Lyster, W.: *Vaccination against typhoid in the U. S. Army*, J. Am. M. Ass., 1915, lxv, 510.

² Harris, L. I.: *Experiences of the New York Health Dept. in typhoid immunization*, Ibid., 1915, lxiv, 3.

³ Paris letter: Ibid., 1917, lxix, 1722.

not to adopt an ostrich policy regarding facts which disagree with one's preconceptions. The statement that there is no evidence to show that typhoid is less prevalent where antityphoid inoculation has been practised is untruthful. The assumption that lessened morbidity is due to up-to-date hygienic precautions instead of antityphoid inoculation is denied by the statistics on enteric diseases which we quoted in the December number of the *GAZETTE*, and by the fact that there is a strikingly small typhoid morbidity under trench warfare conditions, which, in spite of the splendid efforts of the Sanitary Corps, cannot be said to rival hygienic conditions in time of peace.

We note with some surprise the appearance in a medical journal of that delectable morsel of pseudo-science so cherished by the antivivisectionists: "virus taken from a diseased animal."

2. "The practically absolute freedom from typhoid fever of the Japanese soldiers during the war with Russia should be an object-lesson as to the efficacy of thorough and all-comprehending practical hygiene. Antityphoid inoculation was not practised on the Japanese soldiers, yet typhoid fever was a negligible feature in their army sick-list."

It is interesting again to see this object-lesson in hygiene which Japan furnished during the Russian war used as an argument against antityphoid inoculation. For some reason their "thorough and all-comprehending practical hygiene" has proved to be insufficient, because since 1908, in spite of advances in sanitation, they have been practising antityphoid inoculation.

It is profitable to examine the tabulated statistics which Yagisawa⁴ has published. From 1897 until 1903, including the periods of war with China and with Russia, the typhoid morbidity averaged 5 per thousand, mortality 1 per thousand. Later these figures rose respectively to 8 per thousand and 1.3 per thousand. Antityphoid inoculation was introduced in 1908 and the morbidity has dropped to 0.7 per thousand and the mortality to 0.08 per thousand. In other words the morbidity is one-seventh to one-eleventh of what it was previous to the introduction of typhoid vaccination and the mortality is one-twelfth of that in the period 1898 to 1903.

3. "Even at the present time the majority favoring universal antityphoid vaccination has begun to lose some of its members. Great Britain has ceased making antityphoid vaccination compulsory in its army. Why? Because of evidence of doubtful efficacy for good, and of positive injury to the soldiers. England tried it and found it wanting. And I fear, or hope, that the United States will later find it so also."

Judging from the latest information we have received,⁵ Great Britain has no need of compulsory antityphoid vaccination. Ninety-eight out of every hundred men are apparently so convinced of the efficacy of this measure that they voluntarily receive it.

Frank bias is expressed in the statement, "I fear, or *hope*, that the United States will later find it wanting."

4. Quoting Anderson, regarding injection of toxic substances: "No doubt many of them in their secondary effects do the body permanent harm and thus may reduce the natural resistance against disease."

⁴ Yagisawa, M.: *Vaccination against typhoid in the Japanese Army*, Paris Médical, 1916, vi, 489 Abstr. J. Am. M. Ass., 1916, lxxvii, 155.

⁵ *Ibid.* 1917, lxxix, 1642.

Statements 4, 5, 6, 9, 10, 11, 12, 13 are chiefly speculative in nature, but where there are specific citations of cases, only two or three are mentioned. However, this evidence may be considered perhaps admissible. Certainly, it cannot yet be disputed that inoculation is likely to intensify existing active tuberculosis, and it is to be noted that the United States, as well as the French and probably other military authorities, require good health and, especially, absence of fever, as prerequisites to antityphoid inoculation.

5. Quoting Woodruff: "The whole theory of vaccinations and serums is wrong. It insures us against catching one disease only to make us doubly liable to catch others, particularly tuberculosis.

"Vaccination gives us immunity, for a while at least, against some one specific disease, such as typhoid or smallpox. This would be very well indeed if we did not have to pay for it by losing part at least of our natural immunity to tuberculosis."

6. "Le Tulle tells me that all serums and vaccines will cause incipient cases of tuberculosis to get worse. Dr. H. C. Spooner, and Louis and Combe, assistants to Vincent at the Val de Grace in Paris, have noticed that antityphoid vaccines bring out any latent or chronic disease, particularly tuberculosis."

7. "Chantmerse (*sic*) of Paris informs me that he has seen two cases of rapid tuberculosis develop a few days after antityphoid vaccination, and he warns particularly against using it where tuberculosis is suspected."

Chantemesse⁶ has certainly had an enormous experience with typhoid fever and vaccination, and "has seen *two* cases of rapid tuberculosis develop a few days after antityphoid vaccination." However, he seems still to be in favor of antityphoid inoculation if we may judge from his attitude as revealed in his statistical studies. Among 80 000 inoculated men there developed 136 cases of typhoid fever with a mortality of 7 per cent. Among 60 000 not inoculated, there developed 525 cases with a mortality of 14 per cent. These figures cover the entire period of the war up to the date of publication and show that typhoid fever was 6 times as frequent among those not inoculated as among the inoculated, and that the mortality was doubled, meaning, virtually, that 73 lives were lost unnecessarily among these 60 000 uninoculated men.

8. Woodruff in discussing a diminution in typhoid in the British Army is quoted: "The reduction of typhoid by sanitation alone has probably been much greater than the figures show, because the deaths were reduced two-thirds between 1897 and 1907, while the admissions were reduced a half. After 1903, tuberculosis declined at nearly the same rate as the typhoid until a minimum was reached in 1907-1908. Then came an unexplained 70 per cent. increase of 1.9 following the large number of inoculations, and a later slight decline in 1910 and 1911, corresponding with such reduction of typhoid as would have

⁶ Chantemesse, A.: *Results of vaccination in typhoid in the French Navy*. Bull. de l'Académie de Médecine, 1916, lxxvi, 140. Abstr. J. Am. M. Ass., 1916, lxxvii, 1118.

been occasioned by continued improvement in sanitation. The same dependence of tuberculosis upon typhoid fever is seen in the United States Army after 1890."

The figures quoted to show the dependence of tuberculosis upon typhoid fever in the United States Army may possibly be valid after 1890, but do not hold after 1901. In regard to the unexplained 70 per cent. increase following the large number of inoculations in the British Army, it would seem that instead of later declining, as Woodruff states, there should have been a continued increase if it were due to antityphoid inoculation.

9. "Again, the action of vaccine in latent tuberculosis is much the same as that of tuberculin and many unsuspected cases have been thus diagnosed or traced to the vaccine."

"The vaccine has often been charged with activating tuberculosis like tuberculin does and the French will not give it to any one suspected of the disease."

10. From a Berlin letter to the J. Am. M. Ass.: "It is interesting that in those suspected of tuberculosis or with bronchitis, the reaction was more pronounced and expectoration increased."

11. Quoting Ebricht: "I am very loth to give antityphoid vaccine to a person with the least degree of active tuberculosis. I have seen three cases in which the reaction was unusually severe in comparison with non-tuberculous people."

12. From American Medicine: "Tuberculosis following antityphoid vaccination has been reported sufficiently often to be accepted as a fact."

13. From Progrès Médical: "In two cases there was hemoptysis spitting of blood after antityphoid vaccination and a typical tuberculosis pneumonia developed."

The remainder of the article is given over to a discussion of various questions, chiefly tuberculin therapy and the administration of tuberculin and other bacterial vaccins by mouth. A charming example of inconsistent logic is afforded by the author in his discussion of tuberculin therapy. In the first part of the paper he cites the testimony of three physicians regarding the evil rather than beneficent results of tuberculin therapy: that "intelligent experience left absolutely no doubt whatever of the disastrous results of the practise," which "had been altogether abandoned by all experienced and conscientious physicians, because of the unmistakable evil results caused thereby." Then in later quotations on administration of tuberculin and other bacterial vaccins by mouth, the author apparently subscribes to the view that ".001 mg. of tuberculin by the mouth represents .0005 mg. when given by the skin," and that "the careful administration of tuberculin whether by mouth or skin gives brilliant results."

57. *Psychohomœopathy*. 19. Woodbury, B.C.

W. shows that Hahnemann was the originator of the much heralded psychoanalytic treatment, basing his proofs on sections 26-34, 35 and 39 of the Organon. He refers to section 208 to 230 of the Organon, stating that Hahnemann outlines the treatment of that host of disorders, often a combination of somatic and psychic disequilibria, which for so long, until the advent of modern methods of psychotherapy, have not been amenable to cure or susceptible of accurate causative analysis. These instructions viewed in the light of modern psychological knowledge show plainly that Hahnemann had a conception of modern psychotherapeutics. W. suggests that the term "psychohomœopathy" be used for combined drug- and psycho-therapy.

58. *Improper use of pituitrin*. 38. Cookinham, F. H.

Pituitrin is never necessary in normal labor and should not be given before the end of first stage.

59. *Lactuca virosa*. 39. Rautenburg, L. E.

A remedy to stimulate breast-milk secretion.

60. *Alcoholism*. 39. Carmichael, A. R.

Homœopathic remedies employed in treatment of alcoholism.

61. *Are all cures homœopathic?* 42. King, J. B. S.

DIAGNOSIS AND THERAPEUTICS

Post-transfusion reactions: A review of 280 transfusions performed in the wards of Presbyterian Hospital, New York City. Meleney, H. E. *et al.*; Am. J. M. Sc., 1917, cliv, 733.

Transfusion is of real value in cases of hæmorrhage in clean operative cases, in pernicious anæmia, and in some secondary anæmias. It is of little or no value in septic operative cases, cases of bacteriæmia, or cases of acute leukæmia.

The sodium citrate method of transfusion is a very simple and satisfactory method. A dilution of citrate up to 0.5 per cent. in 1000 cc. of blood can be used without producing toxic symptoms in an adult, and that dilution prevents clotting better than a dilution of 0.2 per cent.

Blood grouping should always be carried out before a transfusion. Where a reliable laboratory is at hand the direct-grouping of donor and recipient is not necessary, but otherwise should always be performed. Failure to determine the compatibility of the bloods may result in the sudden death of the patient.

Post-transfusion reaction occurred in 63.6 per cent. of the cases in our series, the reactions varying greatly in degree, but

all being evidenced by a rise of temperature to 100 degrees or more.

The recipient in good general condition is much more likely to have a reaction than the one in poor condition.

The method of transfusion, the blood relationship of donor and recipient, and the blood group of the recipient seem to have nothing to do with the occurrence of the reaction.

Transfusions of small accounts of blood, *i.e.*, less than 200 cc., are less likely to be followed by reactions than are transfusions of larger amounts.

The more transfusions a patient is given the more likely he is to have a reaction, especially if the same donor is used a large number of times. The blood of some donors is more likely to cause reactions than the blood of others.

In some cases the post-transfusion reaction is accompanied by a marked polymorphonuclear leukocytosis. Whether this is due to intravascular hæmolysis or to the formation of a toxic product from the partial splitting of a foreign protein cannot at present be stated. It seems most likely, however, that one of these phenomena is probably responsible for most post-transfusion reactions.

A report on 40 cases of acute arthritis treated by the intravenous injection of foreign protein. Cecil, R. L.: Arch. Int. Med., 1917, xx, 951

The foreign protein used in these cases was usually typhoid vaccin given in a dose of from 40 to 80 million bacteria. The average number of doses was nearly two; C. thinks that the leukocytosis may be a factor in recoveries, but it is more probable that the rise in temperature is more important; no case improved unless there was an accompanying pyrexia. However, there is no thoroughly satisfactory explanation that can be given of the mechanism of this form of therapy. His conclusions are as follows:

In forty cases of acute arthritis the patients have been treated by intravenous injections of typhoid or gonococcus vaccin. Thirteen of these patients, or 32 per cent., made a rapid recovery without recourse to any other treatment. Of the remaining twenty-seven cases, all but two patients showed improvement while receiving the vaccin. Twenty out of twenty-seven, however, received salicylates before complete recovery took place. In the seven cases of acute gonococcus arthritis all of the patients showed gradual improvement under vaccin, but it was impossible to say how much of a factor the vaccin was in these cases.

The reaction produced by the vaccin is usually severe,

consisting of a chill, with rapid rise in temperature, headache, and often nausea and vomiting. During this reaction there is a well-marked leukocytosis. Both the temperature and the leukocytes usually return to normal in a few hours.

This method of treatment is undoubtedly efficient in many cases of acute arthritis; but it is unpleasant for the patient, and may be dangerous when administered to improperly selected patients.

For the present its use is recommended only in carefully selected cases, after salicylates and other well established methods of treating arthritis have failed.

Ætiology and treatment of hæmorrhagic diseases. Hurwitz, S. H.: Am. J. M. Sc., 1917, cliv, 689

This article is a thoughtful review of that heterogeneous group, the hæmorrhagic diseases.

The clinical and experimental work of recent years has made possible a more logical classification of hæmorrhagic diseases. Although it may be premature to speak of an ætiological classification, more emphasis should be laid upon the experimental studies thus far carried out in the grouping of these conditions.

On this basis we may group a number of ætiologic data around some defect or defects in the factors concerned in blood coagulation. Although more than one element may show an abnormality, it is permissible to designate these groups according to the essential defect present. And we may speak of a platelet group or a prothrombin group and the like, meaning that a lack of platelets or a deficiency of prothrombin is in the greatest measure responsible for the pathological hæmorrhages observed.

In the study and in the grouping of hæmorrhagic diseases a number of methods are now available which because of their simplicity possess great clinical value. And we believe that every instance of obscure hæmorrhage should be studied by these methods for the purpose of finding out whether the cause is attributable to an abnormality in blood coagulation. As has been pointed out, some of the tests have great practical importance in diagnosis and treatment. It may be well to emphasize that the existence of a hæmophilic condition ought to be excluded by *in vitro* tests preliminary to any operation upon a patient exhibiting the hæmophilic tendency.

Greater attention should be paid to experiment in determining the value of therapeutic measures in the constitutional treatment of hæmorrhage. Observations on the clinical improvement and on the cessation of hæmorrhage after treatment should be supplemented by studies upon the clotting of the blood and the factors of coagulation before and after the institution of

such therapy. In this way it will be possible to arrive at a more rational treatment of these cases.

Tested by such criteria, whole blood, we believe, is at present the most logical and most efficacious therapeutic agent for the control of bleeding in the greatest number of patients showing hæmorrhagic tendencies. In the majority of instances calcium therapy has not yielded good results and the value of of serum treatment has been much over-emphasized.

Of the local hæmostatic agents recommended, kephalin gives promise of being an important adjunct in the treatment of bleeding from external wounds. It is to be hoped, therefore, that this tissue extract will prove of real value in the control of the immoderate hæmorrhages from the wounds which so frequently complicate the hæmorrhagic diseases.

IMMUNOLOGY

The comparative value of the Wassermann, the colloidal gold and other spinal fluid tests: a study of 203 cases. Hammes, E. M.; *Am. J. M. Sc.*, 1917, cliv, 625

The study of these spinal fluids comprises a cell-count, a globulin test (including the Nonné test, the Noguchi test, and Pandy's test), a Fehling test, a Wassermann, a colloidal gold test and an examination for bacteria when indicated. The technic of these tests is discussed and the correlated findings in general paresis, tabes, cerebrospinal lues, congenital lues, meningitis, tetanus, poliomyelitis, and a number of miscellaneous cases. The conclusions drawn from this study are as follows:

1. The most constant finding in a pathological spinal fluid is a positive globulin. It is indicative of an inflammatory process, but is of no specific import.

2. Pathological cerebrospinal fluids usually show some lymphocytosis. However, the number may be normal. Fluids from cases of meningitis almost invariably give the high cell count.

3. As an index of pathological change in the cerebrospinal fluid the colloidal gold reaction is more delicate than any other test here employed.

4. Normal spinal fluid usually causes no reduction of the colloidal gold. A slight reduction in any of the dilutions is of no diagnostic import, and may occur in normal spinal fluids.

5. Cases of tabes and cerebrospinal lues give a typical colloidal gold curve in the luetic zone. Although in tabes the intensity of the curve is usually greater, it is not sufficiently constant to be of diagnostic value between the two conditions.

6. In paresis the colloidal gold test is sufficiently frequent

and characteristic to warrant the term "paretic curve" and is of great diagnostic value. However, it has been observed in some cases of tabes, cerebrospinal lues, multiple sclerosis, brain abscess, and once in puerperal eclampsia.

7. In meningitis the colloidal gold curve usually occurs in the higher dilutions, and is probably of value in the diagnosis of doubtful cases.

8. In spinal fluids with normal findings, except a paretic colloidal gold curve in doubtful cases, the possibility of a multiple sclerosis must be strongly considered.

9. The colloidal gold test is more delicate than the Wassermann test. Spinal fluids fromluetics have given a colloidal gold luetic curve with a negative Wassermann. However, we have never observed a normal colloidal gold curve with a positive Wassermann in the spinal fluid.

10. Under antiluetic treatment there is usually a reduction in the cell count and globulin of the spinal fluid; frequently the Wassermann becomes negative; rarely is there a change in the colloidal gold test.

11. No spinal fluid test (except the presence of bacteria) is specific. Every test is simply that much coöperative evidence and should be combined with the history of the case and the clinical findings.

Wassermann reaction with diabetic sera. van Saun, A. I.: J. M. Research, 1917, xxxvii, 205.

A number of workers have contended that diabetic sera gave non-specific, false positive reactions with Wassermann antigens. van Saun's observations are based on 73 sera from patients with a known history of diabetes. Of these, 51 were negative. With 19, the serum controls failed to hæmolyze and no readings could be made. Two were doubtful, giving only weak fixations. Of these, one was from a patient who gave history of a chancre twenty-six years before. The other patient gave no history of syphilis. Only one serum gave a positive reaction, and this was from a patient who also had a history of syphilis. These results would seem to dispose of the contention that diabetic sera give readable positive reaction with Wassermann antigens when there is no clinical evidence of syphilis.

The responsibility of the vaccinator in overcoming the rational objections to smallpox vaccination. Force, J. N., and Stevens, I. M.: J. Lab. and Clin. Med., 1918, iii, 220

The authors' experience has been that they obtain 100 per cent. vesicle formation on the previously unvaccinated; they attribute their success to the use of fresh virus which has been kept *cold* since its collection.

They conclude that the use of small multiple insertions shortens the course and minimizes the dangers of smallpox vaccination. Successful vaccination consists in producing either a primary vaccinia, a secondary vaccinia (vaccinoid), or a reaction of immunity. All vaccination certificates should be based on actual evidence of immunity as indicated by one of three reactions described, and not on repeated failures to secure a typical vaccinia. There will be no vaccination failures if cold, fresh, potent smallpox vaccin be used.

PATHOLOGY

Infantile Scurvy, a study of its pathogenesis. Hess, A. F.; *Am. J. Dis. Children*, 1917, xiv, 337.

From an extensive review of the literature coupled with considerable personal experience, Hess arrives at the following conclusions:

One of the several factors in the pathogenesis of infantile scurvy is faulty diet. Pasteurized milk was found to be a contributing cause if it was not fresh,—if given twenty-four to forty-eight hours after pasteurization. From this point of view milk pasteurized in the city is preferable to milk pasteurized at the creamery, which reaches the consumer much longer after the heating process. Aging seemed to play a greater rôle in the production of scurvy than heating, whether the milk was pasteurized or raised to the boiling point. It was found that even raw milk on aging loses its antiscorbutic properties.

Infantile scurvy is not, however, a simple dietary disease. The diet is at fault in allowing the intestinal bacteria to elaborate toxins. It is doubtful whether the toxin is always the same, and therefore, whether, from a strictly ætiologic standpoint, this disorder should be regarded as an entity. Infantile scurvy is an intestinal intoxication or an autointoxication due to the overgrowth of harmful bacteria in the intestine. It is the product of an unbalanced flora which is no longer controlled by a proper dietary.

Oliguria is a common symptom of scurvy. The mild therapeutic effect of citric acid may be ascribed partly to its diuretic properties. Orange juice also was found to bring about marked diuresis.

One of the striking and important symptoms of scurvy is a susceptibility to infection (furunculosis, nasal diphtheria, "grippe," *etc.* Some hæmorrhages are due to this secondary infection, and are to be regarded not as scorbutic, but rather as focal complications. Other hæmorrhages are truly scorbutic. Scurvy, however, is essentially a disorder characterized by malnu-

trition and not by hæmorrhage, taking months to develop, and, from a clinical point of view, frequently latent or subacute.

Infantile scurvy occurring in epidemic form is described. This results when latent scurvy exists among a number of infants and an infectious disease (such as "grippe") is superadded.

Endocrinology and Gynæcology, — a symposium: Surg. Gynec. and Obst., 1917, xxv, 225 to 359

Pituitary. There is a close interrelationship in function between the pituitary and sex glands, a fact supported by abundant experimental evidence and by numerous observations on pituitary disturbances in the human subject. Over-function of the anterior lobe of the pituitary body is associated with over-activity of the sex glands while deficiency of pituitary secretion in the individual is followed by under-development and genital aplasia in the young and by sexual inactivity and retrogression in the adult. Primary alterations in the function of the sex glands, as in pregnancy and after castration, are followed by pituitary hypertrophy and hyperplasia. The specific action of the extract of the posterior lobe of the pituitary gland, commonly known as "puitritin" upon the smooth musculature of the uterus and bowel, has led to the wide usage of this drug in obstetric practice and in the treatment of intestinal paresis following abdominal and pelvic operations, and lastly the administration of pituitary extracts is of distinct benefit in clinical states of pituitary under-function.

Pineal. From the lack of unanimity in the literature, any conclusions as to the details of pineal gland function must be made flexible rather than dogmatic. However, it is believed that a clinical syndrome is to be associated with disturbances of the functions of the pineal gland. Because of the involution of the pineal glands at puberty, the constitutional manifestations of pineal gland pathology appear to be confined to pre-puberty years. The essential characteristics (apart from pressure and neighborhood manifestations) are (a) early sexual development evidenced in the enlarged genitalia, pubic hair, general body hair, early change in voice; (b) precocious mental development, manifested in maturity of thought and speech; (c) general overgrowth of body to the extent that a child of six or seven years may have the appearance of a child near puberty. The inference is allowable that the pineal gland is an organ of internal secretion, whose functions, however, are of minor significance in the general activities of the endocrinous system.

Parathyroids. No direct relationship has been established between the parathyroids and the female sex organs; no morpho-

logical changes in the parathyroids have been noted during pregnancy, yet apparently there is a connection between the parathyroids and the sex processes in the female, since tetany, the clinical evidence of insufficient parathyroid function, is somewhat prone to occur in menstruating, pregnant and puerperal women, as well as patients suffering from gynæcological diseases or who have undergone gynæcological operations.

Thymus. The vigorous research that has been expended upon the thymus gland during the past few years has not, on the whole, been very fruitful. That the thymus serves an important function, especially in the growing organism, cannot be doubted. The organ is conspicuously large, has a characteristic structure, which is maintained with but slight variation in all classes of vertebrates, reacts in a very definite way to a variety of injuries, and has a constant relation to the development of the sexual organs. There are, furthermore, obscure but undeniable correlations with thyroid, adrenal and possibly other organs of internal secretion. Although these general facts seem established, yet in every detail of structure and physiology there has been and is the greatest conflict as to facts and interpretations. The fundamental problems of thymus physiology remain unsolved and the established facts, which concern chiefly the normal and abnormal structure of the gland, are not such as lend themselves to clinical application.

Pancreas. There is at present no evidence of any specific relations of the endocrin functions of the pancreas to the gonads, male or female, or to menstruation, pregnancy and lactation. Absolute diabetes, induced after conception, leads to death of the foetus; furthermore, absolute diabetes probably renders conception impossible. Partial diabetes under careful dietary control permits of normal sex life of women, and pregnancy under such conditions does not aggravate the diabetes, but in the absence of such dietary control the condition of pregnancy aggravates the diabetes in the mother, and uncontrolled diabetes in the mother is extremely injurious to the foetus. There is some evidence that in the late stages of pregnancy the foetal pancreas may functionate for the mother.

Adrenal. The adrenal body represents the anatomical association of two elements, each of which is derived from a separate and independent system. The medullary part is simply the accumulation of chromophil cells of the same nature histologically, chemically and pharmacodynamically as similar masses of cells in other parts of the body and there is no clear evidence that these two systems are functionally related. The medulla is developed from the sympathetic nervous system and its duty seems to be to facilitate the functions of this system in

certain physiological emergencies. The adrenal cortex is developed from the germ epithelium, and the evidence is now strongly in favor of the view that it has certain important functions in connection with the growth and development of the sex organs. There is a considerable amount of clinical evidence that tumors of the adrenal cortex are frequently associated with sex abnormalities, evidenced in the female by an accentuation of male secondary sexual characteristics and simultaneously a hypoplastic condition of the internal generative organs.

Placenta. Placental extracts (mainly the lipid fraction) rapidly induce hyperplasia of the uterus and breast (gland tissue and nipples) in castrates or in non-castrated animals. The chemical substance which induces these changes is thermostabile, very resistant to strong alkalis and acids, and completely soluble in 95 per cent. alcohol, and it appears identical in its physical, chemical and biological properties with a similar substance obtained from the corpus luteum. This substance can exert its influence in the absence of the thyroids, adrenals, pancreas, or in the absence of the thyroids and adrenals combined. In view of the apparent identity of corpus luteum and placental substance the question arises whether the placenta acts merely as a storage reservoir for corpus luteum secretion during the latter half of pregnancy or whether the placenta elaborates a hormone of its own.

Ovary. An elaborate self-regulating mechanism controls ovulation. While normally the corpus luteum inhibits ovulation to the extent of permitting one ovulation in a month, during pregnancy the life of the corpus luteum is prolonged. Experimentally, ovulation can be influenced at will, accelerated by excising all corpora lutea, or retarded by producing artificial deciduomata. This retarding action of the corpus luteum is chemical, not mechanical. The corpus luteum has also a sensitizing action upon the uterus. This action can be analyzed by experimental methods. If the uterus is incised or mechanically stimulated at the time during which the corpus luteum is elaborating this growth substance, maternal placenta is formed. The mechanical stimuli, therefore, assume in this respect the function which the ovum exerts under normal conditions. In addition to these functions of the corpus luteum the ovary has a trophic influence on the genitals and likewise controls the development of the mammary gland.

DERMATOLOGY

Ætiological factors in acne vulgaris. Strickler, A.: Am. J. M. Sc., 1917, cliv, 579

Acne is held to be due, in the vast majority of instances, to the acne bacillus. This organism is probably (usually) present on the skin of individuals not subject to acne, but in those who develop the disease the bacillus is activated by other factors, such as the colon bacillus or its toxins, and in a lesser degree by the staphylococcus. That the colon bacillus seems to have a substantial part in the ætiology of acne is shown by the frequent presence of the complement-fixation reaction with *B. coli* antigen in cases of the disease. Some cases of acne are due to internal administrations of drugs and some to local applications; the use of cosmetics probably tends to increase the prevalence. Some patients show an enlarged thyroid gland. Just what significance this fact has is not known, but some writers believe that it indicates intestinal toxæmia. No connection has yet been shown between food anaphylaxis and acne. Puberty plays an important predisposing part. Contributing factors are seborrhœa, anæmia, derangement of the stomach, nervousness and pelvic disease.

BOOK REVIEWS

Surgery and diseases of the mouth and jaws. Major Blair. Third edition, \$6.00. C. V. Mosby Co., St. Louis, 1917.

This book has been brought out under the authorization of the Surgeon-General of the Army and has largely been used as a text-book in the Oral and Plastic Surgery School for training of medical officers.

There are few textual changes from the first edition of 1913, but there are a number of additions:—paraffin treatment of burns, recently devised jaw splints, gunshot fractures of the jaw-bone, fractures of the nose, the latest methods of general anæsthesia, *etc.*

Exception might be taken to the statement that it is utterly wrong to have rubber gloves dry sterilized; a number of rubber chemists assert that dry sterilization is much superior to boiling, and that it tends towards better conservation of the rubber.

It would seem that the importance of plastic treatment of face wounds merits more detailed description than is furnished in this volume; a larger number of diagrams would be especially helpful.

In the appendix is set forth a résumé of the author's views on the treatment of war wounds. He believes in immediate repair as far as possible,—removing destroyed soft tissue, such fragments of bone as are actually detached, and then the approximation of soft tissues in a position as nearly normal as possible, thereby hoping to eliminate the terrible scar tissue formation that takes place while nature is making a partial repair. However, in wounds that involve the teeth and jaws, it must be remembered that the dental surgeon must have enough room to perform his work on the mouth and that too early or too close approximation of tissues is likely to hinder him in getting impressions of the jaw and in applying splints to produce a normal contour.

The book is well worth having in the surgeon's library.

R. C. W.

Tumors of the Nervus Acusticus and the Syndrome of the Cerebellopontine Angle. By Harvey Cushing, M.D., Professor of Surgery at Harvard University. Octavo of 296 pages with 262 illustrations. Philadelphia and London: W. B. Saunders Company, 1917. Cloth, \$5.00 net.

Nothing exemplifies the progress recently made in the surgical treatment of pathological changes in the brain so much as the above mentioned work recently issued. The entire medical profession and the surgical branch in particular always look forward with impatience to works of this author.

The book exhibits the well-known care that has always accompanied the work of Dr. Cushing. The case reports, symptomatology, the sections on pathology and diagnosis are set forth with unusual clearness. The pages on radiographic changes are of particular interest and would seem to open a new field. The chapter on Surgical Treatment would seem at first to be all too short but the procedure is so clearly laid down therein that one can see after perusal that it needs no further amplification.

In fact, the language of the book throughout is of unusual clearness and conciseness, which are certainly things most desired of those writing on subjects of this complicated character. The double spacing of important passages immediately catches the eye and arrests one's attention.

One closes the book with regret that the great war has interrupted this author's work along these and other lines which have made him famous, but we know that in his tireless industry he is gathering facts on the battle front that will be of great use to all who are to participate in the struggle.

T. E. C.

The Immediate Care of the Injured. By Albert S. Morrow, A.B., M.D., Clinical Professor of Surgery in the New York Polyclinic. Second edition. Thoroughly revised. Octavo of 356 pages with 242 illustrations. Philadelphia and London: W. B. Saunders Company, 1917. Cloth, \$2.75 net.

The second edition of Dr. Morrow's book arrives, showing additions in the direction that interests us most in these days. The work, always a standard, should find far greater circulation now that there is such a widespread interest in First-Aid instruction.

The book can well be adopted as a standard in Red Cross teaching along these particular lines.

The language commends itself because of its simplicity, rendering it easily understandable to the layman. In every case the common name is given together with the medical term.

The illustrations are particularly good and really serve to illuminate the text.

The book deserves a place in every household throughout the land.

T. E. C.

Clinical Lectures on Infant Feeding. By Lewis W. Hill, M.D., Children's Hospital, Boston, and Jesse R. Gerstley, M.D., Michael Reese Hospital, Chicago. 12mo of 377 pages illustrated. Philadelphia and London: W. B. Saunders Company. 1917. Cloth \$2.75 net.

This publication represents a series of clinical lectures delivered by two men, one, Dr. Hill, representing the so-called "Boston" school of artificial feeding, and the other, Dr. Gerstley, the so-called "Chicago," or perhaps more properly, "German" school of feeding. Both contributors have had the clinical experience which makes them able exponents of their particular methods for the artificial feeding of infants.

A perusal of the book makes one conclude that a baby can be artificially fed very well by either method, providing that the physician in charge understands his method and will recognize the individual factor clinically presented in practically every feeding case. This is not the occasion for expressing an opinion as to the value of the two methods, but the book should prove very valuable to the medical student or general practitioner. The accompanying chapters on the nutritional disorders and their treatment dietetically are very well written.

O. R. C.

THE INTERPRETATION OF THE WASSERMANN REACTION

This memorandum was originally drafted by the pathologist of one of the London hospitals for use in the venereal department of that institution. It has since been submitted to the pathologists of the other hospitals in London in which examinations are carried out under the scheme now in force. The present leaflet embodies certain additions which have been suggested by them.

The enormous number of tests which have been made during the ten years since the reaction was introduced have left no doubt as to the meaning to be attached to definitely positive or negative results in the great majority of cases, but in regard to certain points it cannot be said that universal agreement has been reached. The conclusions suggested in these special cases represent only the general trend of opinion.

It must be remembered that the Wassermann reaction is a quantitative one, *i. e.*, it depends on a certain phenomenon occurring to a certain degree, and hence there will always be border-line reactions, which while showing a distinct departure from the normal, are not sufficiently marked to serve as a basis for a definite diagnosis save under special circumstances. Such reactions, when they occur, must be carefully considered in relation to all the known facts of the case in question.

It can be definitely stated that a well-marked positive reaction, obtained with the full technic, or with a modification involving only unessential details, justifies a definite diagnosis of syphilitic infection, provided that leprosy, yaws, and perhaps sleeping-sickness can be excluded: conditions which can seldom enter into consideration in this country. A positive Wassermann reaction is sometimes obtained in malarial cases, where there is a complete absence of symptoms of syphilis and no suggestion, in history or otherwise, of a previous taint, and this point must be taken into consideration in certain cases.

The Reaction in Diagnosis

Onset of the reaction

The reaction first shows itself between the second and sixth week after the appearance of the primary sore. Up to the latter date an indefinite result is obtained in a certain proportion of cases, and during the first three weeks much more certain information may be obtained by examining the chancre for the presence of the *Spirochæta pallida*. If such an examination give a negative result, and the case be clinically suspicious, a Wassermann reaction should be carried out, and, if negative or indefinite, should be repeated after an interval of about a week.

A single negative result obtained during this period is of no value in excluding syphilis.

The secondary stage

From the sixth week onwards, and throughout the whole period of secondary manifestations, practically every case gives a well-marked positive result provided that no treatment has been administered. If, therefore, a patient presents lesions which, if syphilitic, are in the secondary stage and yet give a negative test, the greatest care should be taken before making a diagnosis of syphilis; and it would be well in every such case to obtain the opinion of an expert in the clinical condition.

The tertiary and late stages

The later lesions with certain exceptions, such as aneurysm and general paralysis, do not show quite such a high proportion of positive results, but the great majority of cases, *e.g.*, those showing ulceration of the throat and tongue, *etc.*, give a definitely positive reaction. Thus, although a negative result has not the practically conclusive import which it possesses in the secondary stage, yet it should weigh strongly against a diagnosis of syphilis, and this is especially the case if it can be ascertained that the patient has never undergone any antisyphilitic treatment.

Syphilis of the central nervous system

In patients suffering from syphilitic infection of the central nervous system, the cerebrospinal fluid as well as the blood may give a positive

reaction. The proportion of cases reacting positively varies with the condition present. A well-marked positive result is obtained with the cerebrospinal fluid in practically every case of general paralysis of the insane, in the majority of cases of syphilitic meningitis, and in a rather lower proportion (about 60 per cent.) of tabetic cases. In addition to the presence of a positive Wassermann reaction, the cerebrospinal fluid in such cases shows an increased albumin-content and an abnormally high cell-count. If a patient shows a positive reaction on testing the blood, and there is reason to suspect affection of the central nervous system, the cerebrospinal fluid should be examined on these lines.

Latent syphilis

The reaction affords almost the only certain method of making a definite diagnosis in the case of latent syphilis, and this is especially important in women. A positive reaction, here as elsewhere, must be regarded as incontestable evidence of infection, but we cannot be certain as to the proportion of cases which, though actually syphilitic, give a negative result.

Congenital syphilis

A high proportion of positive results has been recorded by the majority of workers, who have examined large series of congenital syphilitic cases, but here again the exact value to be attached to a negative reaction is difficult to determine. Active lesions in young patients are almost always associated with a positive reaction, but this appears to become less constant as age advances, and in patients beyond the age of puberty it is not uncommon to find a negative reaction in the presence of undoubted congenital syphilitic lesions.

The above remarks refer to well-marked positive or entirely negative results. The exceptional border-line reactions which occasionally occur in untreated cases cannot be regarded as justifying a positive diagnosis unless strongly confirmed by clinical evidence.

The Effect of Treatment on the Reaction

The effect of treatment with *mercury* and with *salvarsan* or its substitutes is to render an initial positive reaction negative. This may occur within a few weeks, but frequently takes several months.

If the treatment has been sufficiently thorough and prolonged (two years or upwards), the reaction usually remains negative when tested several months or years after the treatment has been discontinued. If, on the other hand, the patient discontinues treatment too soon, the reaction, although it may have been temporarily rendered negative, frequently becomes positive again after the lapse of several months.

It follows that no reliance can be placed on a negative result in the case of a patient who, on a doubtful diagnosis of syphilis, has been subjected to active treatment. If such a case can be seen after only a few weeks' treatment, and the practitioner be not satisfied as to the correctness of the original diagnosis, a preliminary test may be made so as to avoid delay in continuing treatment, should the result be positive. If, however, the result be negative, treatment must be discontinued for several weeks at least and the test then repeated. If again negative, it should be repeated a few months later, no treatment having been applied in the interval.

The Reaction in the Control of Treatment

In using the test to control treatment, there is a general consensus of opinion that the ideal result to be arrived at is a permanently negative reaction. For this purpose the correct method is to administer the full course of treatment thought desirable, allow three months to elapse without treatment, and then test the blood. If the result be negative, the tests should be repeated after about six months, and afterwards at longer intervals. If a positive result be obtained in the first or in any subsequent test, treatment should be resumed at once for at least six months, and the test repeated after a treatment-free interval, and so on.

It cannot be said that there is universal agreement as to the meaning of a persistently positive reaction in treated cases; but it is certain (1) that the great majority of cases which have undergone energetic and persistent

treatment yield persistently negative results over many years; (2) that those cases which, several years after treatment has ceased, show obvious lesions clinically, usually give a positive result, and (3) that the appearance of a positive reaction in the blood of a patient who has been insufficiently treated frequently precedes or coincides with the development of symptoms, and persons in whom a positive reaction has been discovered accidentally in the course of routine examinations have often been found to develop obvious evidence of active syphilis subsequently.

It seems most probable, therefore, that a persistently positive reaction in the absence of clinical manifestations indicates persistent infection which may later on become active again.

When controlling treatment one aims at obtaining a completely negative result, and a reaction which might be too weak to justify a diagnosis of syphilis in an untreated case should be regarded as positive under these circumstances.

In practice, it will be found that, in a certain small proportion of cases, the most energetic and prolonged treatment fails to produce a negative reaction, or that a negative reaction, when produced, becomes positive again after a few months of no treatment, and goes through the same changes after repeated subsequent courses of treatment, a persistently negative result never being obtained. The great majority of such cases will be found to have had insufficient treatment, or none at all, during the early stages of the disease, or to be of the congenital type.

The Reaction as a Criterion of Infectivity

This aspect of the question, which is of great importance especially from the point of view of marriage, is unfortunately one on which it is most difficult to obtain a definite conclusion. The ideal evidence of non-infectivity is an absence of clinical signs and a negative Wassermann reaction obtained several months after a thorough course of energetic treatment. A negative reaction with clinical manifestations is of course valueless, though such a combination seldom occurs. The interpretation of a positive reaction in the absence of clinical signs, and in spite of treatment, is a matter of considerable difficulty. When marriage is being considered, a persistently negative result is particularly desirable. Though lesions developing after prolonged and energetic treatment are probably non-infective in many cases, and hence the danger of marital infection may perhaps be regarded as small, yet it must be remembered that, in the case of both sexes, there is an undoubted risk of the individual affected developing late lesions, and that, in the case of female patients, the question of future pregnancy needs special consideration.

It would seem wise to insist in every such case on thorough and prolonged treatment two years or more from the date of infection. If the reaction be then found to be positive after a treatment-free interval lasting for several months at least, a further course of treatment should be strongly advised. Even if this fails to produce a persistently negative result, the risk of marital infection has probably been reduced to a minimum, though the assurance of non-infectivity can never be absolute. If marriage be entered on under these circumstances, it is wise for the individual to undergo further treatment for his or her own sake, and in the case of female patients, it is especially desirable that they should undergo a course of treatment during any pregnancy that may eventuate, since this will reduce to a minimum any risk of giving birth to infected children.

Summary

It may therefore be stated that:

(1) A well-marked positive reaction is undoubted evidence of syphilitic infection, with the few unimportant reservations outlined above.

(2) A single negative result has no value during the first few weeks of the disease. At this stage the sore should be examined for the *Spirochæta pallida*, and if the result be negative, the blood should be tested after a short interval, during which no treatment has been given.

(3) A negative result in a patient undergoing treatment has no diagnostic

value. If the diagnosis be uncertain the test must be repeated after a treatment-free interval lasting for several weeks at least.

(4) A negative result in an untreated case exhibiting suspected secondary lesions almost excludes syphilis, but never does so absolutely.

(5) In the later stages, with certain exceptions, a rather high proportion of undoubted syphilitic cases give negative results; so that such a result, while contra-indicating a diagnosis of this disease, especially if previous anti-syphilitic treatment can be excluded, must be regarded in relation to all other available evidence.

(6) In using the reaction to control treatment, the ideal aimed at should be a persistently negative reaction following a prolonged and thorough course of treatment as explained above. This result, combined with the absence of all clinical signs, is the best evidence of non-infectivity.

(7) A weak positive reaction must always be considered in relation to all the known facts of the case, and has little diagnostic value alone.

It will be seen that, while the broad lines of interpretation of the results obtained by this reaction are not in doubt, there are certain important points on which definite information is still wanted. The only evidence of value in arriving at satisfactory conclusions on these matters is the survey of large numbers of cases. Practitioners can very materially assist in the collection of the necessary data by filling in accurately and completely the forms supplied for sending with specimens and by forwarding, where possible, information as to the further progress of the case.

It is impossible, in a short leaflet, to enter fully into all aspects of the question, and all practitioners who desire further information are strongly advised to attend at one of the treatment centres, and so get into personal touch with the clinician and pathologist in charge. *The Homœopathic World.*

PRINCIPAL CAUSES OF DEATH

CENSUS BUREAU'S SUMMARY OF MORTALITY STATISTICS FOR 1916

According to a preliminary announcement with reference to mortality in 1916, issued by Director Sam. L. Rogers, of the Bureau of the Census, Department of Commerce, and compiled under the direction of Dr. William H. Davis, chief statistician for vital statistics, the "registration area," which contained approximately 70 per cent. of the population of the entire United States, reported for that year 1 001 921 deaths. Of these deaths, nearly one-third were due to three causes — heart diseases, tuberculosis, and pneumonia — and nearly another third were charged to the following nine causes: Bright's disease and nephritis, cancer, apoplexy, diarrhoea and enteritis, influenza, arterial diseases, diabetes, diphtheria, and typhoid fever.

The deaths from heart diseases (organic diseases of the heart and endocarditis) in the registration area in 1916 numbered 114 171, or 159.4 per 100 000 population. The death rate from this cause shows a marked increase as compared with 1900 (the earliest year for which the annual mortality statistics were published), when it was only 123.1 per 100 000. The increase has not been continuous, however, the rate having fluctuated from year to year.

Tuberculosis in its various forms caused 101 396 deaths in 1916, of which 88 666 were due to tuberculosis of the lungs. Because of progress in the prevention and treatment of tuberculosis of all kinds, the decline in the tuberculosis death rate in recent years has been most pronounced, having fallen from 200.7 per 100 000 in 1904 to 141.6 in 1916, a decrease of nearly 30 per cent. Before 1904 the rate had fluctuated, starting at 201.9 in 1900. Even yet, however, tuberculosis causes more deaths annually than any other malady, except heart diseases, and about 37 per cent. more than all external causes — accidents, homicides, and suicides — combined.

Pneumonia (including bronchopneumonia) was responsible for 98 334 deaths in the registration area in 1916, or 137.3 per 100 000. This rate, although lower than that for any year from 1900 to 1910, inclusive, with the

single exception of 1908, is higher than that for any of the years from 1911 to 1915, inclusive. The lowest recorded rate for all forms of pneumonia was 127 per 100 000 in 1914. The mortality from this disease, like that from tuberculosis, has shown a marked decline since 1900, when it was 180.5 per 100 000. Its fluctuations from year to year, however, have been pronounced, whereas the decline in the rate for tuberculosis has been nearly continuous.

The only remaining death rate higher than 100 per 100 000 in 1916 was that for Bright's disease and acute nephritis, 105.2. The total number of deaths due to these maladies in 1916 was 75 316; of this number, 69 395 were caused by Bright's disease and 5921 by acute nephritis. The mortality rate from these two causes has increased from 89 per 100 000 in 1900, with some fluctuations from year to year.

Cancer and other malignant tumors caused 58 600 deaths in 1916. Of these, 22 480, or nearly 39 per cent., resulted from cancers of the stomach and liver. The death rate from cancer has risen from 63 per 100 000 in 1900 to 81.8 in 1916. The increase has been almost continuous, there having been but two years, 1906 and 1911, which showed a decline as compared with the year immediately preceding. It is possible that at least a part of this increase is due to more correct diagnoses and to greater care on the part of physicians in making reports to registration officials.

Apoplexy was the cause of 58 233 deaths, or 81.3 per 100 000. The rate from this disease increased gradually, with occasional slight declines, from 1900 to 1912, and since 1913 the increase had been continuous.

Diarrhœa and enteritis caused 56 763 deaths in 1916, or 79.3 per 100 000. The rate from these diseases has fallen somewhat in recent years, having been 90.2 in 1913, and is very much lower than the corresponding rate for 1900, which was 133.2. Nearly five-sixths of the total number of deaths charged to these causes in 1916 were of infants under 2 years of age.

Influenza was responsible for no fewer than 18 886 deaths in the registration area in 1916, or 26.4 per 100 000. The rate from this malady, which fluctuates very considerably from year to year, was higher in 1916 than in any preceding year since and including 1900, with the single exception of 1900, when it stood at 32.2.

Arterial diseases of various kinds — atheroma, aneurism, *etc.* — were the cause of 17 115 deaths in 1916, or 23.9 per 100 000. This rate, although somewhat lower than the corresponding ones for 1912 and 1913, is higher than those for 1914 and 1915. The rate for these causes increased continuously from 6.1 in 1900 to 25.6 in 1912.

Deaths from diabetes numbered 12 199, or 17 per 100 000. The rate from this disease has risen almost continuously from year to year since 1900, when it was 9.7.

No epidemic disease, with the exception of influenza, produced a death rate as high as even 15 per 100 000 in 1916. The fatal cases of diphtheria and croup — which are classed together in the statistics, but practically all of which are cases of diphtheria — numbered 10 367, or 14.5 per 100 000 population. The rate for diphtheria and croup in 1900 was 43.3, and the decline of nearly 67 per cent. from that year to 1916 is relatively greater than that shown by any other important cause of death. The rate fluctuated somewhat from 1900 to 1913, but has fallen continuously since the latter year.

The mortality rate from typhoid fever has shown a most remarkable and highly gratifying decline since 1900, having dropped from 35.9 per 100 000 in that year to 13.3 in 1916. The proportional decrease in the rate, amounting to 63 per cent., is a close second to that shown for diphtheria and croup. The efficacy of the antityphoid vaccin and of the many improvements in methods of sanitation has been demonstrated in a striking manner by this great reduction in the typhoid death rate.

Measles, Whooping Cough, and Scarlet Fever

The principal epidemic maladies of childhood — measles, whooping cough, and scarlet fever — were together responsible for 17 586 deaths of both adults and children, or 24.6 per 100 000, in the registration area in 1916, the rates for the three diseases separately being 11.1, 10.2, and 3.3. As in 1913, measles caused a higher mortality than either of the other diseases, but in

1914 and 1915 whooping cough had first place. In every year since and including 1910, as well as in several preceding years, measles has caused a greater number of deaths than scarlet fever. The rate for scarlet fever in 1916 was the lowest on record, while that for whooping cough, although considerably below the highest recorded rate for that disease, 15.8 in 1903, was far above the lowest, 6.5 in 1904.

Acute Poliomyelitis

Acute anterior poliomyelitis, commonly called infantile paralysis, caused 7130 deaths in 1916, representing a rate of 10 per 100 000 population. This disease developed in epidemic form in that year, and the resultant mortality showed an enormous increase. The rate from infantile paralysis declined from 2.7 per 100 000 in 1910—the first year in which this malady was reported separately as a cause of death—to 1 per 100 000 in 1915, the decrease having been continuous from year to year except for an increase between 1911 and 1912. The rate for 1916, however, was ten times as great as that for the preceding year.

Of the 26 states in the registration area in 1916, the 5 showing the highest rates reported 75 per cent. of all the deaths from this cause. These states, with their rates, were: New Jersey, 41; New York, 32.8; Connecticut, 19.2; Massachusetts, 12.5, and Maryland, 8.1. The next highest 5 rates appear for Pennsylvania: 7.8; Rhode Island, 7; New Hampshire, 5.6; Montana, 5.2, and Michigan, 4.9.

Accidents and Injuries

The deaths resulting from accidents in 1916 numbered 60 071, corresponding to a rate of 83.9 per 100 000 population. This rate is considerably in excess of that for 1915 (76.3). The most marked increases appear for deaths due to railroad and to automobile accidents and for those resulting from the effects of heat.

The rate for deaths from railroad accidents in 1916 (11.3) exceeds the corresponding rates for 1914 and 1915 (10.7 and 9.9, respectively), but, with these exceptions, is the lowest one recorded since 1906, the first year for which deaths from this cause were reported separately.

Deaths from automobile accidents and injuries in 1916 totaled 5193, or 7.3 per 100 000 population. As might be expected, in view of the enormous increase in the number of automobiles in use, the death rate due to these causes has advanced continuously since 1906—the first year for which they were reported separately—when it stood at 0.4 per 100 000 population.

Deaths resulting from street-car accidents in 1916 numbered 1775, or 2.5 per 100 000. This rate is the same as that for 1914, but shows an increase as compared with 1915. During the past 10 years, however, there has been a material falling off in the rate for this cause.

Machinery accidents caused 1624 deaths in 1916, or 2.3 per 100 000 population, this rate being somewhat greater than those for the preceding two years—1.9 for 1915 and 2 for 1914.

The number of deaths from mine accidents and injuries in the registration area in 1916 was 2119, corresponding to a rate of 3 per 100 000. The deaths from these accidents for the last three years show a material decline as compared with those for the preceding 10 years.

There were 2056 deaths in 1916 from the effects of heat, the rate being 2.9 per 100 000 population. This is the highest rate shown for this cause in the last 15 years, with the exception of that for 1911, which was 5.3.

Suicide

The number of suicides reported for 1916 was 10 162, or 14.2 per 100 000. This rate is the lowest for the past 10 years.

Deaths Caused by Firearms

The total number of deaths due to the use of firearms in the registration area in 1916 was 8240, corresponding to a rate of 11.5 per 100 000. Of these deaths, 3386 were suicidal, 3241 were homicidal, and 1613 were accidental

The suicidal use of firearms shows a decline as compared with 1915 and 1914; their homicidal use decreased as compared with 1914, but increased as compared with 1910, 1911, 1912, and 1915, and the rate was the same as for 1913; and the frequency of accidental deaths due to their use shows a slight decline during recent years.

OLD THOUGHTS ON CURRENT TOPICS. SOME EXTRACTS FROM PARIS' PHARMACOLOGIA

It always gives a curious sensation to find some problem that we are accustomed to consider modern treated in a thoroughly modern manner by an author of long ago. Some references in Wall's "Prescription" call attention to Paris' Pharmacologia, a most excellent book, which was first published in 1812 and passed through many revisions.

The most valuable part of the book is the Introduction "An analytical inquiry into the more remarkable causes which have, in different ages and countries, operated in producing the revolutions that characterize the history of medicinal substances." *Page 15.*¹

In this the author treats of problems as old as the medical profession — but like all fundamental problems, ever new. His remarks could be read, with very little change, at any current medical meeting; but instead of plagiarizing I would like to quote some selections, starting with the opening paragraph of the book:

The Rise and Fall of Drugs:

"Before I proceed to discuss the particular views which I am prepared to submit to the College, on the important but obscure subject of medicinal combination, I propose to take a sweeping and rapid sketch of the different moral and physical causes which have operated in producing the extraordinary vicissitudes which so eminently characterize the history of *Materia Medica*. Such an introduction is naturally suggested by the first glance at the extensive and motley assemblage of substances with which our cabinets are overwhelmed. It is impossible to cast our eyes over such multiplied groups without being forcibly struck with the palpable absurdity of some, the disgusting and loathsome nature of others, the total want of activity in many, and the uncertain and precarious reputation of all — or, without feeling an eager curiosity to inquire, from the combination of what causes it can have happened that substances, at one period in the highest esteem and of generally acknowledged utility, have fallen into total neglect and disrepute; why others, of humble pretensions and little significance, have maintained their ground for so many centuries; and on what account materials, of no energy whatever, have received the indisputable sanction and unqualified support of the best and wisest practitioners of the age. That such fluctuations in opinion and versatility in practice should have produced, even in the most candid and learned observers, an unfavorable impression with regard to the general efficacy of medicines, can hardly excite our astonishment, much less our indignation; nor can we be surprised to find that another portion of mankind has at once arraigned physic as a fallacious art, or derided it as a composition of error and fraud. They ask — and it must be confessed that they ask with reason — what pledge can be afforded them that the boasted remedies of the present day will not, like their predecessors, fall into disrepute, and, in their turn, serve only as humiliating memorials of the credulity and infatuation of the physicians who commended and prescribed them? There is surely no question connected with our subject which can be more interesting and important, no one which requires a more cool and dispassionate inquiry." *Pages 15 and 16.*

The Backwardness of Materia Medica:

"In tracing the history of *Materia Medica* to its earliest periods, we shall find that its progress towards its present advanced state has been very slow and unequal, very unlike the steady and successive improvement which has attended other branches of natural knowledge; we shall perceive even

¹ The paging is that of the 3rd Edition (1820).

that its advancement has been continually arrested and often entirely subverted by the caprices, prejudices, superstitions and knavery of mankind." Page 17.

Empirical Experience:

"To such causes we must attribute the barren labours of the ancient empirics, who saw without discerning, administered without discriminating, and concluded without reasoning; nor should we be surprised at the very imperfect state of the *Materia Medica*, as far as it depends upon what is commonly called experience." Page 18.

Shoemaker, Stick to Your Last:

"Lord Bacon, with all his philosophy, betrayed a disposition to believe in the virtues of charms and amulets; and Boyle seriously recommends the thigh bone of an executed criminal as a powerful remedy in dysentery." Page 25.

Extravagant Claims:

"By bestowing unworthy and extravagant praise upon a remedy, we in reality do but detract from its reputation and run the risk of banishing it from practice; for when the sober practitioner discovers by experience that a medicine falls so far short of the efficacy ascribed to it, he abandons its use in disgust, and is even unwilling to concede to it that degree of merit to which in truth and justice it may be entitled." Page 33.

Red Light Treatment:

"I apprehend that John of Gaddesden, in the fourteenth century, celebrated by Chaucer, must have been directed by some remote analogy of this kind (doctrine of signatures), when he ordered the son of Edward the First, who was dangerously ill with smallpox, to be wrapped in scarlet cloth, as well as all those who attended upon him or came into his presence, and even the bed and room in which he was laid were covered with the same substance, and so completely did it answer, say the credulous historians of that day, that the Prince was cured without having so much as a single mark left upon him." Page 39.

Therapeutic Fashions:

"Thus there exists a fashion in medicine as in the other affairs of life, regulated by the caprice and supported by the authority of a few leading practitioners, which has been frequently the occasion of dismissing from practice valuable medicines, and of substituting others less certain in their effects and more questionable in their nature. As years and fashions revolve, so have these neglected remedies, each in its turn, risen again into favour and notice, whilst old receipts, like old almanacs, are abandoned until the period may arrive that will once more adapt them to the spirit and fashion of the times." Page 43.

Mercurial Inunction:

"Its effects, when applied externally, were well known to Theodoric the Friar, in the twelfth century, who described the salivation which mercurial frictions will produce." Page 61.

William Hunter, on the Stomach:

"Gentlemen," said he, 'physiologists will have it that the stomach is a mill—others, that it is a fermenting vat—others again, that it is a stew-pan—but in my view of the matter, it is neither a mill, a fermenting vat, nor a stew-pan—but a STOMACH, gentlemen, a STOMACH.' Page 69.

Complexity Spells Obscurity:

"It is evident that the fallacies to which our observations and experience are liable with respect to the efficacy of certain bodies, as remedies, must be necessarily multiplied when such bodies are exhibited in a state of complicated combination, since it must be always difficult, and often impossible, to ascertain to which ingredient the effects produced ought to be attributed." Pages 75 and 76.

"The practice of mixing together different medicinal substances, so as to form one remedy, may boast of very ancient origin, for most of the prescriptions which have descended from the Greek physicians are of this description;

the uncertain and vague results of such a practice appear also to have been early felt and often condemned, and even Erasistratus declaimed with great warmth against the complicated medicines which were administered in his time." *Page 76.*

"In modern Europe, the same attachment to luxuriandy of composition has been transmitted to our own times; there are several prescriptions of Huxham extant which contain more than *four hundred* ingredients." *Page 77.*

Rule of Simplicity:

"Let not the young practitioner, however, be so deceived; he should remember that unless he be well acquainted with the mutual actions which bodies exert upon each other, and upon the living system, it may be laid down as an axiom that *in proportion as he complicates a medicine, he does but multiply the chance of its failure. Superflua nunquam non nocent*; let him cherish this maxim in his remembrance, and in forming compounds always discard from them every element which has not its mode of action clearly defined, and as thoroughly understood." *Page 110.*

How to Draw Forth Eloquence:

"It is said that whenever Dunning, the celebrated barrister, was called upon to make the finest displays of his eloquence, whether forensic or parliamentary, he constantly applied a blister to his chest, which he found to have the effect of imparting an unusual tone and vigor to his body, and elevation to his mind." *Page 120.*

[Torald Sollmann in the *Cleveland Medical Journal*.]

ECONOMIES SUGGESTED BY THE GOVERNMENT

What Can Be Done With Garbage

New York City's garbage, by treatment in a \$3 000 000 recovery plant of the latest type on Staten Island, yields the following commercial products:

Grease for 70 000 000 cakes of soap; 1500 tons of nitrogen; 2000 tons of phosphoric acid; 500 tons of potash. With the nitrogen, and the glycerin from soap making, there is a recovery of material yielding 3 500 000 pounds of high explosives, while the phosphoric acid and potash, as well as the nitrogen, are valuable in the making of commercial fertilizers.

This plant operating under the so-called Cobwell process, which treats garbage almost entirely by chemical methods, has effected increased recoveries of valuable products amounting to at least 25 per cent. more than recoveries under the best previous reduction methods used for New York's garbage. In soap, for instance, there is an additional recovery of grease for 10 000 000 cakes a year, and in high explosives material for 700 000 pounds.

Under a contract with the city the Metropolitan By-Products Co. (Inc.) takes all the garbage from the Boroughs of Manhattan, The Bronx, and Brooklyn for a period of five years, beginning with 1917, paying \$900 000 for the raw garbage during that period. Garbage is deposited on scows along the Hudson and East Rivers and hauled to the plant during the night. The chemical treatment followed not only eliminates all odors incident to the old boiling process, by which garbage was cooked for a long period in water, but saves many of the rich chemical elements which were formerly lost. Under the old process it is said a large percentage of these elements were cooked into a rich soup, and then the soup was thrown away. Moreover, a considerable percentage of grease was burned by the high temperature driers used before degreasing, and the cooking process had a splitting effect upon the material which led to considerable losses of glycerin, which ran away in waste water. The new process saves these materials. The plant required is more expensive to install, but much more economical in operation.

To Save Soap

Soap-saving devices are being brought to attention as a consequence of the advancing cost of soap due to fat scarcity. One of the simplest is a wire basket on toilet stand or sink in which the soap is placed for use. The current of air striking up from below dries the soap after wetting and prevents loss through dissolving of soap when the cake is allowed to stand in its own drippings. Another method of soap saving is that followed by grandmother,

who bought her soap by the dozen cakes, or sometimes a full box, took the wrappers off and allowed it to dry hard on her shelves, which added greatly to its lasting qualities. A commercial device for soap saving is that of attaching to the bottom of each cake a piece of tinfoil, which is said to protect the bottom of the cake from dissolving by water.

Yellow Gasolin is Good

It is suggested that our gasolin supply may be increased considerably if motorists will overcome an unwarranted prejudice against yellowish gasolin. In the early days of the oil industry poor refining methods were responsible for the production of yellowish kerosenes and gasolins, which were sometimes dangerous. This led the public to demand that gasolin be "water white," and the prejudice has hindered the development of cracking processes which produce perfectly safe gasolin with a slightly yellowish tinge. Another handicap in the industry, according to petroleum experts, is the necessity for refiners treating gasolin with sulphuric acid and caustic soda to remove unsaturated hydrocarbons which have high fuel value in an explosion engine. It is estimated that there is a loss of \$10 000 000 a year in the United States through these prejudices, represented by 30 000 000 gallons of gasolin, 35 000 tons of sulphuric acid, and 3500 tons of caustic soda.

PERSONAL AND GENERAL ITEMS

First Lieut. Le Verne Holmes, M.R.C., B.U.S.M., 1904, is in the Sanitary Department, 111th Field Artillery, Camp McClellan, Anniston, Ala.

Mrs. Lillian G. Knowles has changed her address to 12 Iowa Circle, N.W., Washington, D. C.

Lieut M. M. Braff, U.S.N., B.U.S.M., 1917, has written from Liverpool, England.

Major Richard Weil died at Camp Wheeler of pneumonia, which he was there to combat.

Captain Wesley T. Lee, B.U.S.M., 1898, and Lieuts. Roland O. Parris, 1914, Kirke L. Alexander, 1914, and Harold W. Ripley, 1917, were ordered to the M.O.T.C. at Fort Oglethorpe, Georgia, on February 4, 1918.

Captain Lee has since returned to Boston to mobilize the enlisted personnel of Base Hospital 44 and to proceed to Camp Dix, Wrightstown, New Jersey.

Lieut. Harold L. Babcock, B.U.S.M., 1910, has been assigned to the signal corps of the Aviation section.

Lieut. Hollis G. Batchelder of Dedham has been ordered to Camp Devens, Ayer, Mass.

The women of the Homœopathic medical profession have just been accorded a generous and significant courtesy by the staff of the New England Hospital for Women and Children. As a measure towards furthering greater wartime efficiency, the staff, through its chief, Dr. Emma Culbertson, has offered to homœopathic women physicians the privilege of taking their patients to the New England Hospital, where they may perform their own operations under the personal tutelage of expert women surgeons until they have attained that degree of surgical proficiency which will enable them to work independently.

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ORIGINAL COMMUNICATIONS

TUMORS OF THE BLADDER *

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The origin of malignant growths remains a mystery. We may accept the theory of Cohnheim that a portion of embryonic tissue in its primitive condition is retained in the organism, where it awaits unknown stimulus in order to develop into a malignant tumor. The appearance of epithelial growths in tissues where epithelial cells do not normally exist seems to substantiate this theory.

The parasitic theory of cancer rests upon the discovery within the tumor of globular bodies which resemble spore-bearing forms of protozoa. The parasitic nature of these globules is denied by many pathologists, who consider them the result of cell degeneration instead of an ætiological factor in cancer.

A vesical tumor which originates from epithelial tissue is classified as a papilloma, adenoma or carcinoma; when arising from connective tissue, sarcoma, myxoma or fibroma. The carcinoma and sarcoma are malignant growths.

Papilloma, although classified among benign tumors, shows easy transition to the malignant type. This tumor usually originates as a benign growth. A single villous tumor may be present, or the growths may be multiple. It has a well-defined pedicle and an irregular surface made up of projections which terminate in finger-like points of variable length, which when viewed by the cystoscope float like seaweed.

The pedicle is attached to the mucosa of the bladder; is more dense in structure than the tumor itself and contains numerous blood vessels which supply the main growth. When

* Read at the Semi-annual Meeting of the Connecticut Homœopathic Medical Society, October 16, 1917.

malignant transition occurs, an induration appears at the base of the pedicle, extends into the deeper layers and involves an area of variable extent. From insufficient blood supply, the terminal filaments become necrotic, separate from the tumor and are thrown off in the urine. Capillary extravasation occurs, producing hæmaturia.

Secondary tumors are occasioned by implantation of detached villi from the parent growth.

Carcinoma. The true carcinoma of the bladder usually presents a sessile appearance, with all the typical characteristics of carcinoma. The growth is dense in structure, with indurated edges, involves the mucosa and underlying structures, ulcerates and breaks down in a characteristic manner. In my experience, these growths have been most frequently observed in the posterior wall of the bladder in close proximity to the prostate, or in the trigone of the bladder, where they encroach upon the ureter. I have purposely avoided the discussion of tumors of the bladder which have their origin in the prostate, as these would naturally be considered under diseases of the prostate.

Sarcoma of the bladder is rare and has not been encountered in my experience.

SYMPTOMS AND DIAGNOSIS

Hæmaturia may be the sole symptom of villous tumor. The bleeding occurs at irregular intervals without apparent cause. The urine may be clear for days, weeks or months, then become bloody for several days.

The amount of blood lost during a period of bleeding is rarely enough to endanger the patient's life, but frequent repetitions produce a profound anæmia. As a general rule, the larger the tumor, the more extensive and prolonged the hæmorrhage will be. If the bleeding is profuse, blood clots may be formed within the bladder, occasioning dysuria and strangury.

Fragments of necrotic tissue may become detached from the surface of the tumor and be cast off in the urine. Occasionally, large portions of the tumor become separated from the mass and cause obstruction at the internal meatus. The microscopical examination of this tissue will reveal the true nature of the growth, if the disintegration is not so great as to obscure its histological characteristics.

The growth of a papilloma is slow. It may exist for years before it occasions serious inconvenience. The appearance of blood in the urine should lead to apprehension, and long periods of clear urine with occasional hæmaturia suggest tumor of the bladder.

A large papilloma which practically fills the bladder may rest

upon the meatus, causing extreme dysuria or complete suppression of urine. In the latter stages of the disease, infection of the bladder takes place and a serious purulent cystitis supervenes.

The symptoms of carcinoma are similar to those of papilloma, blood in the urine being the cardinal symptom. The tumor may be slow in development or exceedingly rapid in its growth. If slow, it probably originated as a papillomatous growth and remained as a benign tumor for a long time, with no symptoms except occasional hæmorrhage. In the course of time, a transition into a malignant tumor occurs, when the symptoms become more severe and typical of malignant disease.

A true carcinoma involves the mucosa and underlying structures of the bladder, resulting in an extensive area of induration. Coincident with induration, contraction of the bladder wall occurs and the capacity of the bladder becomes restricted, causing frequent urination. Symptoms of obstruction necessitate the use of the catheter, which is followed by cystitis. When this occurs, associated with cancer, it assumes a most virulent type. The urine becomes turbid, thick in consistency, green or brown in color and exceedingly offensive. Hæmorrhage is increased by this septic process and an ascending pyelitis with suppression of urine and uræmia occurs. In many cases, the retention of urine necessitates instrumentation which occasions hæmorrhage by the contact of the instrument with the growth.

Carcinomata are found in all parts of the bladder, but are most frequently located at the trigone, the internal meatus near the mouth of the ureters, or the prostate.

A diagnosis was formerly made by the symptoms above described; intervals of clear urine followed by hæmorrhage, pain in the bladder, dysuria, *etc.* These symptoms are not positive evidence of tumor of the bladder, for hæmaturia occurs in certain diseases of the kidney and the question of the origin of blood has always presented difficulties.

Fortunately, we have at our disposal an instrument of precision, which permits early and accurate diagnosis. By the use of the cystoscope we are able to determine the presence or absence of a bladder tumor. Its situation can be accurately ascertained and the character of the growth determined with reasonable certainty. This eliminates the confusion which formerly existed as to the source of the hæmorrhage. By studying the growth, with the aid of the cystoscope, we may plan the operation best adapted to the case under consideration.

The difficulties encountered in making a cystoscopy for tumor of the bladder are many. The presence of blood in the urine obscures the field of vision. This can usually be overcome by careful instrumentation or washing the bladder with adrenalin solu-

tion. A more serious obstacle is encountered when the bladder has become contracted so that it cannot be properly distended. The presence of a large papilloma which nearly fills the bladder may render cystoscopic examination impossible, as the point of the cystoscope may come immediately in contact with the growth, or become imbedded in it, entirely obscuring the view.

Before the invention of the cystoscope, the surgeon considered himself fortunate if he could definitely locate the tumor within the bladder, thereby positively eliminating a kidney lesion. Without definite knowledge of the location of the lesion and with forebodings of injury to the peritoneum, the surgeon scrupulously avoided entering the abdomen and usually attacked the bladder through the typical suprapubic incision. Free access to the bladder and to the site of the neoplasm was well-nigh impossible, except in rare cases where the growth involved the dome of the bladder. Accurate diagnosis, precise localization and the extent of the growth are now readily ascertained with the cystoscope.

The transperitoneal operation as first performed by the late Dr. F. B. Harrington in 1893 has made possible a direct attack upon bladder tumors which previously were considered inoperable. A sessile carcinoma situated near the trigone, involving the posterior bladder wall, cannot be thoroughly extirpated through an extraperitoneal bladder incision, but can be operated upon by the transperitoneal route. All sessile carcinomata involve the mucosa, the submucosa and muscular coats of the bladder, and their radical removal therefore necessitates the resection of a portion of the entire bladder wall and transplantation of the ureters should the tumor encroach upon the ureteral orifices. Such extensive operations can be done only through a large abdominal incision with laying open of the bladder from its fundus to the trigone. When this is done, the operative field becomes accessible and the difficulties of technic are greatly reduced.

TECHNIC OF OPERATION

The patient is placed in the Trendelenburg position. A median abdominal incision is made from the symphysis to the umbilicus and the abdominal cavity is thoroughly explored for enlarged lymphatics and evidences of metastases. The intestines are withdrawn from the pelvis and the space posterior to the bladder, walled off with gauze. Tenaculum forceps are applied to the posterior bladder wall and this viscus is drawn upward out of the pelvis as much as possible.

Incision is made from the dome of the bladder to the trigone, in a location so that the intravesical tumor may be accessible. The lateral walls of the bladder are retracted so that the entire interior of the bladder comes readily into view.

Inspection of the bladder confirms the presence of a tumor and discloses its exact nature. If a papilloma is present, it should be handled with great care. This friable growth should be elevated and carefully wrapped with gauze. This is necessary in order to prevent detached portions of the tumor from being disseminated along the line of incision, where implantation and subsequent new growths would be likely to occur. In one of my cases, this accident unfortunately occurred and resulted in a rapidly growing carcinoma which involved the parietal wall along the entire length of the incision.

The pedicle should then be inspected to ascertain whether induration is present. A thickened pedicle with induration extending along the mucosa is indicative of carcinoma and necessitates a more radical extirpation than would be necessary if the growth showed no evidence of transition. Although a papilloma is classified as a benign tumor, experience has shown that these growths are likely to recur in the form of true carcinoma.

I am opposed to simple excision of these growths with a thermocautery, as has been recommended, as it has proved in my experience inadequate. I prefer the more radical operation of wide excision of that portion of the bladder wall to which the pedicle is attached. In true carcinoma, a total resection of the involved portion of the bladder is necessary. Unfortunately, the majority of these growths occur at the base of the bladder and frequently involve the ureter, necessitating its transplantation. Where the tumor is not accessible and cannot be excised with the knife and subsequently sutured, the thermocautery may be used.

In several cases operated upon by me it has been necessary to make extensive resections of diseased portions of the bladder. In one case about one-half of the bladder was removed. This diminishes its capacity, but fortunately the resulting disturbances are temporary, as the bladder readily expands and the patient suffers little inconvenience from frequent micturition. After the excision of the tumor, the bladder wall should be closed by sutures. The first row should be a continuous suture of iodized catgut with the knots tied within the bladder. It should incorporate the mucous and muscular coats. The second, a hardened catgut suture, should penetrate the peritoneum and muscular coats. The third suture of the same material should be used to approximate the peritoneum. Formerly, I used Pagenstecher thread in the middle layer. In one case, this suture became infected, resulting in an annoying sinus which persisted several months.

I have operated upon seven cases of tumor of the bladder by the transperitoneal route without any leakage of urine into the peritoneal cavity, although in two cases a severe cystitis was present

This experience leads me to consider the danger of contamination of the peritoneal cavity to be remote.

After the bladder wall is sutured the abdominal wound may be closed without drainage. A self-retaining catheter should be left in the urethra.

RECURRENCE

Carcinoma of the bladder is not more malignant than cancer located elsewhere. In fact, a greater length of time intervenes between the first symptoms and the extension of the disease to adjacent tissues, and metastasis is frequently absent in far-advanced cases.

In cases operated upon, a surprising length of time elapses between the first appearance of blood in the urine and the anæmia and bladder irritation which ultimately lead the patient to seek surgical relief.

In view of the slow growth of these tumors and the large proportion of papillomatous neoplasms, which are frequently non-malignant in their early manifestations, I am convinced that early operation offers a hopeful outlook for radical cure of papilloma and a long period of immunity in carcinoma, when operated upon early.

Late operations give no better results than delayed operations in cancer located elsewhere and in far-advanced cases may be a distinct disadvantage and may even hasten the progress of the disease. The only operation permissible in such cases is a suprapubic drainage for the relief of tenesmus and strangury.

Recurrence takes place in papillomatous tumors of the bladder, either at the site of the scar, or at points remotely located from the original focus. Recurrence in the scar is usually due to incomplete removal of the growth; and a new growth in remote locations, to implantation of filaments separated from the original tumor. Papillomata usually recur as carcinomata and the progress of the disease is characteristic of this lesion. Sessile carcinoma recurs in its original location, involves by continuity a large part of the bladder wall and progresses more rapidly than the original growth.

Watson¹ has studied the records of 653 cases of vesical tumors, 243 benign and 410 malignant, and has found that following more or less radical operations for papillomata and myomata, 34 per cent. were free from recurrence at the end of a year. He states that if the operative deaths and the rapid recurrences are combined under the head of operative failures, such failures will have occurred in 28.5 per cent. of benign tumors and 46 per cent. of carcinomata.

As an illustration of what can be accomplished for relief of patients suffering from papilloma of the bladder, the following case is cited:

¹Mayo's papers, 1905-1909.

Miss X, age 60 years, consulted me October 18, 1908, for a painless hæmaturia of $2\frac{1}{2}$ years' duration. She was very anæmic from oft-repeated hæmorrhages. Cystoscopic examination revealed a papilloma situated in the dome of the bladder. A suprapubic incision exposed the bladder nearly filled by a papillomatous growth, exceedingly friable and attached by a broad pedicle. No induration was found. The growth was excised from the mucosa and deeper layer of the bladder with the thermocautery, the wall was closed with sutures and a self-retaining catheter was placed in the urethra.

The patient remained in perfect health until January, 1910 (one year, three months), when she again developed hæmaturia. These attacks increased in frequency, and when she again consulted me in June, 1912, she had lost 25 pounds in weight and was passing small pieces of tissue with the urine, accompanied by much pain and tenesmus. The urine was never free from blood and her condition was growing progressively worse.

I operated upon her on June 21, 1912, making a suprapubic incision and a transperitoneal bladder operation. The bladder contained a papillomatous mass three inches in diameter and exceedingly friable. Upon being handled, it broke down and bled freely. One-half of the urinary bladder was excised. The inner layer was closed with catgut, the muscular and peritoneal coats with Pagenstecher thread. Following this operation, a sinus formed which discharged a few drops of pus daily for several months until a small piece of Pagenstecher thread was discharged, when the wound closed.

The patient remained in excellent health until March, 1914, when she again noticed blood in the urine. A cystoscopic examination was made and three papillomata were discovered; the largest about 5 cm. in length by 2.5 cm. in breadth, occupied a position in the dome of the bladder in the scar of the previous operation. The second, 2.5 x 2 cm., was about 2.5 cm. to the left. The smallest, 2.5 x 0.6 cm., was near the trigone. All of them had small pedicles.

A median abdominal incision was made and the tumors, with a section of the bladder wall, were excised by the transperitoneal operation. Three rows of iodized catgut sutures were used in the bladder and the abdomen closed without drainage. A self-retaining catheter was left in the urethra. Both the bladder and abdominal wounds healed by first intention.

At the time of the first operation, this patient was suffering profoundly from anæmia and I am convinced that she could not have lived more than six months without operative relief. Five and one-half years elapsed between the first and last operations and she is now in excellent health.

At the first operation, microscopical sections were made from all portions of the tumor and a diagnosis of papilloma was made. At the second operation, the microscope showed a typical carcinomatous growth. At the third operation, no evidences of carcinoma could be found in any of the growths, although many sections were made from the tumors.

A letter from this patient under date of February 4th, 1917, states that she is free from bladder symptoms and has had no hæmorrhage from the bladder since the last operation. It will be seen that about eight and one-half years have elapsed from the date of the first operation and three years since the last operation and there is at present no indication of recurrence. I feel that we are justified, therefore, in claiming a radical cure in this case.

DOUBLE RECURRENT AND BILATERAL TUBAL PREGNANCIES

An analysis of 89 cases reported in the literature and 3 unpublished personal cases

AIME PAUL HEINECK, Chicago, Illinois

Extra-uterine pregnancy is one of the most important maladies of the child-bearing period. It occurs in all races, appears to be less frequent in the colored (4 negresses in 169 cases). The condition, though more frequently recognized than heretofore, is, nevertheless, too often overlooked, misdiagnosed and, therefore, mistreated. The safety with which the abdomen is now opened affords opportunity for the recognition, study and relief of many conditions which previously escaped detection. A more complete understanding of tubal gestation will lead to the saving of lives and to the prevention of invalidism.

Tubal gestation is by far the most common variety of ectopic pregnancy. It is single, double, or multiple; unilateral or bilateral. It may be a woman's first and last conception; it may be preceded by a long period of infertility; it may end a woman's child-bearing career; it may make future pregnancies impossible; it may precede or follow a normal pregnancy or pregnancies. It has preceded and has followed uterine abortions. Tubal pregnancy may co-exist with a uterine pregnancy. It can occur in the absence of other pathological states of the pelvic or other organs. Its occurrence in one tube does not protect against its occurrence in the opposite tube, does not absolutely protect against its recurrence in the same tube.

Double and recurrent tubal pregnancies have not received

adequate study and consideration. To facilitate the task of future investigators, I have collected, studied and analyzed all cases of double and bilateral tubal pregnancies reported with sufficient data in the English, French and German literature from 1908 to 1916 inclusive. Only original reports of cases in which the diagnosis was verified at operation were considered. The statements made in this article are entirely based either on these reported cases or on our unpublished personal cases.

Double tubal pregnancies are almost invariably bilateral; exceptionally unilateral.

Double and bilateral tubal pregnancies are either simultaneous or recurrent. If simultaneous, both conceptions begin at or about the same time; both gestations may develop, or one may be interrupted and the other continue. Usually, the two foetal cysts differ in size and destiny. Twenty-nine of the double tubal pregnancies herein considered belong to the simultaneous group. One double tubal gestation occurred in a nullipara 41 years old, another in a multipara 45 years of age. The other simultaneous cases in which the age was recorded tabulate as follows:

Age	Cases	Per cent.
20 to 24	3	10.34
25 " 29	11	37.93
30 " 34	7	24.13
35 " 39	4	13.79

As previously stated, the recurrent type is by far the most frequent (63 cases). Almost always, the recurrence is in the opposite tube. Recurrence of gestation in the same tube is a rarity.

The ages of the patients at the time of the second tubal gestation and percentage incidence as to age is shown by the following table:

Age	Cases	Per cent.
20 to 24	3	4.76
25 " 29	20	31.74
30 " 34	20	31.74
35 " 39	7	11.11

Comparison of the two previous tables with the following reveals that the age incidence of tubal gestation is not the same as that of uterine gestation.

Normal births in Chicago, based on 3600 cases (Redfield)

Age	Per cent.
20 to 24	31.95
25 " 29	29.72
30 " 34	18.64
35 " 39	10.14

Double and bilateral tubal pregnancies can occur at any period of the child-bearing age. We do not know how often tubal pregnancy recurs; we do not know why it occurs. Authors are not agreed as to the frequency of recurrence. The frequency of recurrence in the practice of various clinicians is shown by the following table:

Hunner.....	31	cases of tubal gestation,	2	recurred
Madlener....	63	" " " "	3	"
Heineck.....	70	" " " "	3	"
Lothrop.....	83	" " " "	3	"
Rosenstein...	100	" " " "	6	"
Horrman....	101	" " " "	5	"
Wertheim....	120	" " " "	7 or 8	"
Finsterer....	133	" " " "	9	"

One ectopic pregnancy is not necessarily followed by another ectopic pregnancy. Normal pregnancies may be sandwiched in between two extra-uterine gestations.

Months, or even years, may elapse between the incidence of pregnancy in one tube and the lodgment of an impregnated ovum in the opposite tube. Some authors reckoned the time interval either between the inception of the two abnormal pregnancies or between the two operations performed for their relief. The latter method is basically faulty.

In our collected cases, the interval between the two tubal gestations varied from three months to nine years. In 21 cases, tubal gestation recurred within 1 year; in 12, within 3 years. In some cases, the time interval between the two tubal gestations was 4 years, 5 years, 7 years and 7 months; in others, the time interval was not definitely stated.

Double, recurrent and bilateral tubal pregnancies occurred in women who have never borne living children. Tubal pregnancy has recurred in women who have borne one living child, two children, three children, four children, five children and six children.

Double, recurrent and bilateral tubal pregnancies, like other varieties of ectopic gestation, not infrequently occur in women who though frequently exposed to pregnancy have remained sterile. In many cases, a long period of sterility precedes double, or intervenes between two, tubal gestations.

CAUSATION

The cause of tubal pregnancy, whether single, double or recurrent, is not definitely known. Many hypotheses have been advanced, some very plausible, none of universal application. No causative factor present in every case has been demonstrated. Not uncommonly, coëxisting pathological states are found. Are these

pathological states coincidental or ætiologic factors? With the data at hand, a positive answer is not possible. The problem calling for solution is, why does the impregnated ovum fail to find its way into the uterus?

Inflammatory and other degenerative changes of the tubal wall do not possess the important ætiologic rôle formerly attributed to them. Though all conditions that obstruct, delay or hinder the progress of the impregnated ovum to the uterus favor the occurrence of ectopic gestation, still many cases occur in which, the existing tubal gestation excepted, there is a total absence of pathological tubal or ovarian changes, congenital or acquired. Actual examination at time of operation has firmly established the fact that an inflammatory condition is not present in all cases. "In a certain proportion of cases, the most careful clinical history and microscopical examination of the specimen will fail to reveal a tangible cause for the condition." (Williams.)

It has been believed that the predominant cause of tubal pregnancy is salpingitis, post-abortum, post-partum or gonorrhœal in nature, with resulting destruction of the tubal ciliated epithelium. "I have been able to demonstrate the presence of cilia in nearly every pregnant tube which I have examined." (Williams.)

In some cases, the presence of coëxisting pelvic pathological states is recorded, cyst of parovarium, ovarian cyst, polycystic degeneration of left ovary.

In one case, Puppel removed the left ruptured and pregnant tube and separated the right adnexa from imbedding adhesions. One year later, the right tube became pregnant and ruptured. Smith reports a case presenting similar features. Wesenberg, in his case, removed a fist-sized Fallopian tube containing coagula and foetal rests. Examining the thickened right tube and finding its fimbriated end closed, he incised the fimbriated end and sewed the tubal mucosa to the tubal serosa. One year later, this repaired tube became pregnant.

All our collected and personal cases were primarily either interstitial, isthmic, or ampullary. All the others were bilateral. These 92 cases represent 185 tubal gestations. Not one of these pregnancies, either first or second, went to full term.

COURSE

Sixteen gestations were subjected to operative relief previous to tubal abortion or tubal rupture.

Thirty-two tubal gestations terminated in abortion; seventy-five in rupture. In the remaining cases, the termination is either not recorded or not definitely stated. Termination depends in great part upon the implantation site of the ovum, thus in the isthmic form, this portion of the tube not admitting of much distention,

early rupture is the rule. In the ampullary form, the tubal wall offering less resistance in the ampullary region to the growth of the ovum, abortion is the rule. Tubal abortions are due to rupture through the capsular membrane; they are incomplete, or complete, the incomplete being the more common. Complete tubal abortion implies complete expulsion of the ovum, membrane and contents, into the peritoneal cavity by way of the abdominal ostium of tube. In the incomplete type, there is a partial loosening of the ovum from the tubal wall and only parts of the ovum pass into the peritoneal cavity. In incomplete tubal abortion, the hæmorrhages recur as evidenced by repeated colicky pains and laminated clots. Tubal abortion has been appropriately designated by some authors as intra-tubal rupture.

Rupture, extra-tubal, occurs at or near the placental site, taking place either into the peritoneal cavity or between the folds of the broad ligament. Primary rupture of the ovum, in by far the larger number of cases, occurs previous to or about the eighth week; in a few cases, it occurs later. It may involve any portion of the tube, isthmic, middle third, ampullary, and vary in size from a pin point to a tearing asunder of the entire tube. Even a pin-point rupture may cause a fatal hæmorrhage. In the only case of this series in which hæmorrhage apparently caused death, the rupture was a small orifice on the free portion of tube through which chorionic villi projected. The tubal tissues in contact with the ovum offer slight resistance to the foetal elements, and being early invaded by the chorionic villi and foetal cells, the pregnant tube soon undergoes degenerative changes. The tubal wall is weakened both by the continuous and gradually increasing distention exerted by the growing ovum and by the erosive action of the foetal elements upon the maternal tissues. The tubal resistance being thus impaired, rupture is easily brought about either by direct perforation by the growing villi or by any sudden opening of a large vessel, by the clogging of venous channels, or by slight external violence as vaginal examination, coitus, fall, *etc.*

Bilateral tubal gestation may terminate in tubal rupture in one tube and in tubal abortion in the other.

Tubal abortion and tubal rupture, be the latter intra- or extra-tubal, are associated with moderate or profuse internal hæmorrhage, either in the lumen of the Fallopian tube, between the folds of the broad ligament, or into the peritoneal cavity. When capsular rupture takes place in a tube with closed fimbriated end, an hæmatosalpinx results. If the rupture involves a part of the tube not covered by peritoneum, an intraligamentary hæmatoma results. The duration and extent of the hæmorrhage will determine the size of the hæmatoma. When the pressure of the surrounding tissues and extravasated blood equals or exceeds the intravascular

pressure, all further hæmorrhage is checked. In tubal abortion, and in tubal rupture of a portion of the tube covered by përitoneum, the hæmorrhage, if moderate and circumscribed, hæmatocele results; if profuse and diffuse, hæmoperitoneum results.

When hæmorrhage takes place into the free peritoneal cavity, a practically limitless space, the patient may bleed to death without a drop of blood appearing externally. These profuse hæmorrhages into the peritoneal cavity are designated by the French, "*inondation përitonéale*."

Blood extravasated in the lumen of the tube, between the folds of the broad ligament or in the peritoneal cavity, either undergoes absorption, coagulation, organization, cyst-formation, or suppuration.

FATE OF THE OVUM

The ovum lodged in a tube being always poorly fixed and poorly nourished, most tubal pregnancies come to an end previous to the eighth week. When tubal gestation ends this early, be the termination due to ovular apoplexy, tubal abortion or tubal rupture, the ovum is absorbed. This is the fate of young embryos extruded into the peritoneal cavity, if they be not removed by the surgeon. When, after tubal abortion or tubal rupture, the placenta retains some tubal implantation and contracts new attachments to the pelvic wall, rectum or other viscus or viscera, the placental circulation thereby continuing, the pregnancy becomes tubo-abdominal or tubo-peritoneal in type. Absorption is more difficult after the third month.

In many operations for early tubal gestation, the embryo is found in the tube or in the abdominal or peritoneal cavities. This occurred in nineteen of our patients in which there were found either in the tube or in the peritoneal cavity, one, two, and, in one case, three fœtuses. Most of these were found at the time of the second gestation. The fœtuses varied in size from 3 mm. to 20 cm.

Ovular débris, placenta, decidual cells, fœtal rests, chorionic villi, *etc.*, are more frequently found at time of operation than fœtuses. In 24 cases, the presence of inflammatory adhesions binding the pregnant tube to the pelvic wall, to the omentum, to the *caput coli*, *etc.*, is recorded. These adhesions, rarely found at the time of the first operation, are not uncommonly noted in operations for recurrent tubal gestation.

SYMPTOMS

The symptoms of tubal gestation, like those of uterine gestation, can be classified into presumptive, probable and positive. The positive symptoms of pregnancy, fœtal heart sounds, active and passive fœtal movements, palpation of fœtal parts, are usually not

detected until after the fourth month of gestation. Now as 81 per cent. of tubal gestations terminate before, or about, their eighth week, it can be seen that the positive signs of tubal pregnancy corresponding to the positive signs of uterine pregnancy are rarely present and, therefore, rarely detected. In not one of our cases were any of the positive signs of pregnancy present.

Previous to tubal abortion and to tubal rupture presumptive signs of pregnancy, such as amenorrhœa, nausea and vomiting, bluish discoloration of vaginal walls, pigmentation and striæ, urinary disturbances, were noted in many of the cases. Amenorrhœa is so constant a symptom in tubal pregnancy that its absence is misleading. In 29 cases of simultaneous double tubal pregnancy a cessation of the menses for a varying period is recorded in twenty-seven cases. In the remaining two cases, amenorrhœa is not recorded as present or absent; there was vaginal hæmorrhage in both, but from the test it is hard to tell whether this uterine hæmorrhage was or was not a menstrual hæmorrhage. Menstrual irregularity should arouse suspicion.

In the bilateral cases in which gestation was of successive occurrence, cessation of the menses occurred, with few exceptions. The duration of the suppression, of course, varies according to the age of gestation. In some in which amenorrhœa is not noted, what was mistakenly considered menstrual hæmorrhage was a uterine flow incident to the termination of the tubal pregnancy.

Other presumptive symptoms such as nausea and vomiting, colostrum secretion, milk secretion, bluish discoloration of the vaginal wall, enlargement of breasts, *etc.*, are less frequently recorded.

Among the probable signs, the most frequently noted in our series were changes in size, consistency and position of the uterus. "The existence of an enlarged uterus at any time during the child-bearing period should be regarded as presumptive evidence of pregnancy until such a possibility has been conclusively eliminated." (Williams.)

The victim of ruptured tubal gestation is not as a rule struck down without premonitory symptoms or warning. The patient suspects pregnancy. Suspicion of ectopic gestation should be entertained upon the complaint of sudden pelvic pain in a woman of child-bearing age. The most characteristic symptoms that confront the clinician are those determined by tubal rupture or by tubal abortion. Both of these accidents are associated with pain and with internal hæmorrhage, the extent of which determines the gravity of the case. Very often the patient first comes into the hands of the physician some time after she has recovered from the primary shock due to tubal rupture or tubal abortion.

In tubal abortion there may be acute, severe, cramp-like pain

limited to the pelvic region or referred to other portions of the abdomen; there may be absence of pain. In many cases of tubal abortion about the only symptom we have is abdominal pain and uterine colic preceding and accompanying the expulsion of the decidual cast. In tubal rupture, the pain is intense, agonizing, may cause the patient's collapse. It is most marked in the lower abdomen and may be referred to the right side, to the left side, to right kidney region, to the rectum, epigastrium, umbilicus.

Coincident with the lodgment and development of the ovum, the uterus, during the first three months of tubal gestation, undergoes hypertrophy, and its endometrium becomes converted into a decidua similar to that observed in uterine pregnancy. Soon after the death of the foetus, the decidua is thrown off, being expelled in shreds, or as a triangular cast of the uterine cavity, with dimensions corresponding to that of the hypertrophied uterus. According to Remy, the expulsion of a decidual cast of the uterine cavity is always a sign of ectopic pregnancy.

DIAGNOSIS

Though tubal pregnancy, and especially bilateral tubal pregnancy, are frequently operative discoveries, the diagnosis being rarely made previous to tubal abortion or tubal rupture, the following symptoms, taken in conjunction with a suggestive history and suggestive pelvic findings, should make one think of the possible existence of tubal gestation:

- a. Presence of the presumptive symptoms and signs of pregnancy: morning sickness, milk and colostrum secretion, pelvic pains referable to bladder and rectum.
- b. Cessation of the menses.
- c. Bluish discoloration of the vaginal wall.
- d. Softening of the cervix.
- e. Changes in size, consistency and position of uterus.

The existence of ectopic pregnancy is highly probable when, in association with the above, palpation reveals an indefinitely outlined tender, boggy mass to one or both sides of uterus, in a patient who has or has had symptoms of acute anæmia and attacks of acute abdominal pain, especially if the abdominal tumor has increased in size with each attack of abdominal pain.

If, during an intermenstrual period with or without a suppression of the menses, a woman has an attack of severe abdominal pain followed by vomiting, collapse, slight uterine hæmorrhage, think of tubal abortion. If after a few days or a few weeks, the same clinical picture recurs, suspect the existence of a bilateral tubal pregnancy.

The severe pain of tubal rupture is accompanied or followed by symptoms of abdominal hæmorrhage and acute anæmia, pallor, dizziness, nausea, collapse, weak, thready pulse. A definite muscular rigidity is noted by several reporters. In almost all cases associated with the above, vaginal hæmorrhage varying in amount, slight, profuse, and in duration 3 to 6 weeks, is said to have been present. These attacks of pain and vaginal hæmorrhage, anæmia, may be repeated. Bi-manual vaginal examination usually detects an elastic, often globular tumor-mass, to one or other side of uterus, or peri-uterine mass occupying the cul-de-sac of Douglas and the two lateral cul-de-sacs, and in a few instances even extending into the iliac fossa. Previous to rupture or abortion, the foetal cyst may displace the uterus in various directions to the right, to the left or forward.

TREATMENT

The treatment of ectopic gestation previous to, at time of, or after, tubal rupture or abortion is operative. As stated in some of our previous publications on this subject, we disregard completely the life of the ectopic foetus and concentrate our efforts to saving the maternal health and the maternal life. The ectopic foetus, in all its various forms and at all periods of its existence, is a distinct menace to the maternal organism. Operation removes in a few minutes what it will require nature unaided, even in the most favorable cases, a long time to accomplish and thereby early secures the safety of the patient.

The operation for the relief of ectopic pregnancy, for the control of its complications and the cure of its sequelæ, may be an emergency operation, may be one giving us time for ample preparation of the patient. In a general way it can be said that an ectopic gestation is a malignant growth and the longer it is unmolested, the greater are the dangers to the mother.

In cases of tubal rupture and also in cases of tubal abortion associated with symptoms of abdominal hæmorrhage, operative relief must be immediately instituted. A patient can bleed to death into the peritoneal cavity without a drop of blood appearing externally. Peritoneal flooding calls for immediate intervention. Operation is equally indicated previous to tubal abortion or tubal rupture but under these conditions if the patient is vigilantly watched delay of two or three days is not very significant.

In all operations for ectopic pregnancy, we discard the vaginal route. We prefer the abdominal route. Most diagnostic mistakes are common conditions that simulate unilateral or bilateral ectopic pregnancy, require for their cure an abdominal section: appendicitis, hydrosalpinx, pyosalpinx, ovarian cyst, sub-peritoneal uterine fibroid. If these conditions were mistakenly diagnosed ectopic

gestation, no harm has been done. The laparotomy enables one to remove them. If they coëxist with a tubal gestation, laparotomy enables one to treat appropriately both conditions. We are justified in making our diagnoses and basing our management of cases upon presumptive evidence. A large mortality results from delayed diagnoses.

The most immediate danger of tubal abortion or tubal rupture is hæmorrhage. Laparotomy permits an immediate and complete arrest of hæmorrhage. Colpotomy permits an evacuation of blood clots. If the blood accumulation has acted as a tampon, its mere evacuation may be followed by a recurrence of the hæmorrhage. Laparotomy not only secures absolute hæmostasis but enables one to eliminate the danger of post-operative or secondary hæmorrhage.

Laparotomy permits a more complete removal of ovular débris and extravasated blood. It is not necessary to remove all blood from peritoneal cavity. Let there be no needless traumatizing. Furthermore, it allows inspection of the pelvic organs and enables one to decide at once whether or not the opposite tube should be removed.

Unilateral tubal pregnancy calls for removal of the pregnant tube. The operator must not be haunted by the thought of recurrence. Recurrence in the opposite tube is exceptional.

We are not justified in sterilizing a woman just because she has had a tubal gestation. Remove the unaffected tube:

- a. If there be existing in the patient some constitutional state contraindicating pregnancy, such as epilepsy, alcoholism, worst types of neurasthenia, syphilis, mental disease, imbecility, advanced tuberculosis, advanced cardiac or hepatic disease, renal disease, bad types of primary anæmia.
- b. If there be existing in the patient some pelvic deformity preventing delivery of a viable foetus through the maternal passages.
- c. If it be imbedded in adhesions, if it be malformed or the seat of a congenital anomaly or of inflammatory, neoplastic or other degenerative changes; hydro-salpinx, pyosalpinx, *etc.*

Do not remove the unaffected tube unless there be existing in the patient a condition contraindicating pregnancy. There are many cases on record where a normal pregnancy has occurred after the ablation of a Fallopian tube.

In unilateral tubal pregnancy and in bilateral tubal pregnancy there should be no needless removal of tissues or organs. Therefore, if the ovaries are normal or only slightly altered, their preserva-

tion will be of great benefit to the patient. In addition to removing pregnant tube, foetus and ovular débris, if the patient's condition permits, correct coëxisting pathological states. Many operators in addition to performing a bilateral salpingo-oöphorectomy, supravaginal, or a total hysterectomy, broke up inflammatory adhesions, or removed the appendix vermiformis presenting acute or chronic inflammatory changes. Others removed a coëxisting cystic ovary or a cyst of the parovarium.

In our tabulated cases there were removed 42 left and 47 right Fallopian tubes. In 15 cases it is stated that the left ovary was removed. The right ovary was removed 22 times. In a few other cases, portions of the ovary were removed. In 6 cases, the conditions were such that the operators were compelled to perform either a total or sub-total hysterectomy. In 15 instances, abdominal drainage was used; in 3 instances vaginal drainage was used. It may be said that as a general rule the use of drainage in these cases is inadvisable.

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THE TREATMENT OF SYPHILIS *

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As we meet here in this room tonight there is assembled in many parts of the world under military supervision and rule the greatest number of what may most correctly be called the "flower of the nations" that has ever been brought together. This assemblage consists mainly of the most active and virile men of the civilized world. A larger part is in the activities of warfare. A smaller part belongs to those nations already mobilized but as yet neutral in the world war now in progress. All are living under more or less unnatural conditions, free from home ties and restraints,

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and with their minds turned far more to physical or bodily conditions than to intellectual or moral ones.

Small wonder is it therefore that history is repeating itself, only upon an infinitely more extensive scale than ever before, and from Britain, from France, from Germany, from Austria, from Canada, yes, and now from America, comes the one common inquiry. This inquiry, this cry is, "What can be done to save our boys, our young men, our fathers of families, from the curse of the venereal peril?"

Yes, and when comes, as come it must, the home-coming, the resultant cry will arise, "How can be saved the innocent wives and confiding sweethearts and the wives-to-be from contamination by the same scourge?"

With such a problem already confronting us and an even greater one in prospect, no excuse seems necessary for the devotion of one evening to the consideration of one phase of the subject, namely, treatment. Of course it is admitted that prevention is far better than cure and is always to be preferred. Many skilled men are actively engaged the world over in prevention and are doing most notable work in this line. Such is human nature, however, at least masculine human nature, that the millennium will surely dawn before venereal disease is eradicated. This being a fact, those of us who endeavor to do our duty at home are destined to encounter in the not distant future a vastly increased number of victims of this disease than ever before.

Does some one question these statements? Am I drawing a picture too vivid to portray the facts accurately? Tarry with me here for but a minute.

Secretary Daniels in an address before the Clinical Congress of Surgeons of North America recently said: "There is not an army in the field whose effectiveness is not reduced by reason of immoral diseases." In the U. S. Navy alone in 1916 there were thus disabled every day throughout the year nearly 500 men, more than sufficient to tax to overflowing all departments of our hospital here to the exclusion of everything else.

In the Army, 84 men in every 1000 were admitted for venereal disease and in the Navy 112 per 1000. In other years this has been as high as 140 per 1000. It has been reported that "at one time the equivalent of three entire Austrian divisions of 60 000 men was under treatment for venereal disease, while the German army in Belgium, representing only a small part of the total German forces, is reported during the first five months of its occupation to have furnished 35 000 such patients. Canadian and Australian officers have deplored the ravages of this disease. Figures from the British army gave 78 000 cases. Sir William Osler places infectious disease

at the top as a menace in war and in peace. It is deadlier than smallpox or cancer or tuberculosis. A Canadian authority says:

"Its ravages today are more terrible for Britain and Canada than Vimy Ridge, the Somme and Lens.

"The remedy, there is but one — continence. It must be preached in the home, in the school, in the marts of trade, in the pulpit and military camps and among shipmates afloat."

May I once more quote from an editorial in last week's *Boston Medical & Surgical Journal*: "Statistics of Gaucher's clinic at the Saint Louis Hospital during the first two years of war give some conception of the serious mischief which almost certainly is now being caused by the spread of syphilis. In his address to the Academy of Medicine, he said: 'Whereas, before the war, there were, in round numbers, 300 recent cases of syphilis in 3000 patients at our clinic, or 1 in 10, in the first months of the war we had 800 cases of recent syphilis in 5000 patients, or 1 in 6. In the eight months that followed, our statistics show 600 cases in 2300 patients, or 1 in 4. Thus in the first sixteen months of war, from August, 1914, to the end of December, 1915, syphilis increased by more than one-third, while in the eight subsequent months, January to August, 1916, it increased by more than one-half. Syphilis generally has increased by two-thirds.' Its effects and after-effects are comparable with those of war itself. It now takes rank with alcoholism and tuberculosis as national scourges.

"Since the mobilization in 1914, youthful life has been penalized by the indifference of the public whose mock-modesty has been blind, deaf and persistently wrong. Near the front, for example, the ravages of venereal diseases form a serious calamity. Great harm is done to young soldiers of 19 and 20 years of age by the display on the streets. Its daily appeal is an intensive cultivation of vice, and is particularly mischievous in the case of youths, excited by war and out of touch with their normal selves.

"When contingents arrive the population passes all at once into a febrile mood of exaltation. Drink flows, excitement multiplies itself, and the scene becomes a carnival. No one capable of discerning the spirit of such occasions can possibly fail to realize that its whole tendency is relaxing and enervating. It is in this environment that venereal diseases flare up and spread.

"Not only is the menace already present with the army but in civil life it is also increasing, for we read 'Estimates made by the Royal Commission on Venereal Diseases indicate that in the larger towns in England at least 10 per cent. of the total number of inhabitants is infected with syphilis, and that gonorrhœa is even more prevalent.' This would mean that in London alone there are 45 0000 syphilitics. Sir William Osler places this disease as third on the list of what he terms 'killing diseases.' That venereal

diseases have not been adequately grappled with as have other infectious diseases is due to the mistaken policy of silence."

I think these facts should amply substantiate my early statement of the present and prospective great increase in the number of syphilitics. Such being the case, let us ask the famous "Tweed ring" question, "What are you going to do about it?"

Prophylaxis, you answer. Yes, but in these times of war, when all normal conditions are disjointed, prophylaxis is, to say the least, difficult. And even then the trouble has already spread widely and will in due time be brought home to us to add to our already heavy burden of war.

DIAGNOSIS

Granting prophylaxis to be the ideal treatment, what is the next most important step toward control? There can be but one answer, "early diagnosis." Let us consider this but briefly, vital though it is. In these modern days of the microscope and the test tube there cannot be an excuse for long overlooking a case of syphilis. The causative microörganism is now well known and can be readily demonstrated under proper conditions.

Accordingly, any sore, pimple, crack or excoriation on the genitals, or elsewhere, if in the slightest open to suspicion, should be repeatedly tested for treponemata. Do not trust to clinical symptoms in the least degree, as they are notoriously deceptive. Many cases passed as chancroid by competent men have later shown splendid Wassermann's. There is but one thing to do here if there is any doubt at all, and that is to examine some of the lymph from the local sore, using dark field illumination. This fluid is best examined fresh, when it may be preserved for several hours as a thin film between slide and cover glass by sealing the edges with oil. Less satisfactory are dried stained films.

A very good method when the lesion has extended to the production of buboes is to puncture the firm, rather painless lymph-nodes with a fine hypodermic needle and thus obtain uncontaminated lymph. If treponemata are thus found, active treatment should be immediately instituted. Some people advocate surgical extirpation of the chancre. It is never in itself sufficient to abort the disease, and while in theory some times advisable, in practice it is seldom done. At about the third to the fourth week we begin to look for a positive Wassermann. Prior to this time a negative Wassermann is absolutely valueless as a symptom, and must never be given any weight in excluding syphilis, at least before the end of the first month. After this period, on the contrary, the test rapidly assumes a position of the highest importance. So important is it that in secondary syphilis practically every case shows a very strongly positive reaction.

Much has been said and written about the value and significance of the Wassermann reaction, and concerning this probably each of you here present has conflicting opinions. Many false and faulty reports have been sent out by persons unskilled in the proper, very intricate technic. Some use a too delicate antigen, giving a too high percentage of positives, and others use a too weak antigen, giving too many negatives.

During the past five years, we have made between 8000 and 10 000 complete Wassermann tests, and from these my opinions have been formed. From the first we have believed that the tests should always be performed in duplicate in order to obtain more accurate readings. During the first year we used the original Wassermann method together with the Noguchi modification. Later this was changed to the present procedure. This in brief consists in testing each specimen of blood twice, once using an acetone-insoluble antigen and once a cholesterol-fortified one.

The former is a weak reagent, one that would not show some feebly positive cases. The latter is a very strong one, one that might react positively in an occasional negative case. The combination of the two insures safety. Thus a positive acetone reaction practically always means syphilis, while a negative cholesterol one strongly contraindicates it in an active stage.

When one contradicts the other, further investigation follows.

This method is the one now generally used in the best laboratories, both state, hospital and private.

The third method of diagnosis — lumbar puncture — comes late in the disease and is too extensive a topic to permit consideration at present. It is not, however, a means of early diagnosis.

TREATMENT

Assuming now that we have had our patient and that by one or other of the above tests or even by history and clinical evidence we know he has syphilis, what will we do with him? The answer to this question will vary somewhat, depending upon the stage of the disease. Let us assume the first or second stages. The patient is given a physical examination, which in older individuals should be very thorough. The urine should be examined. He (or she) should be given directions for a thorough cleansing of the lower bowel by either cathartic or enema. Directions should be given to take but little, if any, food at the meal prior to the administration of treatment. Late in the afternoon the patient comes to the office and is here given the first intravenous treatment of salvarsan, neosalvarsan or one of the similar products now manufactured in the United States, Canada, England or France, such as arsenobenzol, diarsenol, neodiarsenol, *etc.* The original German product is now out of the market, and fortunately so, because the last shipment,

the one arriving by the *Deutschland*, gave rather numerous bad results. Care should be taken to avoid any of the unofficial substitutes, as they are often worse than useless.

If the more common forms are used, arsenobenzol or diarsenol, the first dose should be about 0.2 to 0.3 grams. Following this the patient goes home and is instructed to eat sparingly that evening (toast and tea) and to drink water freely as desired. The following morning if all is well the usual method of life is resumed, barring only alcohol and undue smoking. In possibly 5 per cent. of cases there may be some nausea, vomiting or perhaps a little fever. When, however, the alimentary canal is clear and the kidneys active the danger of this is but slight. This is particularly true when the drug is mixed with perfectly fresh 0.4 per cent. saline prepared with very recently distilled water.

About 7 days later the entire process is repeated, using now 0.3 to 0.4 gram., and again in 14 days and in 21 days. The maximum dose for men is 0.5 to 0.6 gram., for women 0.4 to 0.5 gram.

After four, or at times five, such treatments, the patient is placed upon an intensive mercurial treatment for a period of three months. This latter consists of the administration of mercury both by mouth and intramuscularly. Once a week deep gluteal injections of the salicylate in sterile oil are given, beginning with 0.5 grain and gradually increasing to 1.5 or 2 grains.

We prepare our own solution in individual ampuls, never using the same one a second time, and thus far have had no abscesses or other ill results. Coincident with this the patient is given protiodid of mercury in 0.1 grain tablets, beginning with one a day and increasing to the point of toleration, and then dropping just below that point. By this means the body is kept saturated with the drug for three months.

At the end of this time all medication is stopped for three weeks. The blood is then taken for the Wassermann test. If this test comes back strongly positive, further salvarsan treatments are administered. If but feebly positive or negative, another course of mercury is instituted. If after the second three month period and its following intermission, the Wassermann is still negative, mercury by mouth only is advised for a third period.

After this, blood tests without medication over a total period of at least two years, with resumption of treatment at the slightest evidence of return, are in order.

The results in such cases treated as outlined have been most satisfactory. During the past five years between 8000 to 10 000 Wassermanns have been done, about 2000 salvarsan injections have been given to about 500 patients and a large number of intraspinous treatments have been administered. As a result of our own experiences, therefore, we believe that when properly treated, from

75 to 90 per cent. of cases of primary and secondary syphilis are curable. I do not think it necessary to take the time to detail these cases; the records are available for demonstration. It will be noted that mercury is not begun till after the course of salvarsan is finished, thereby differing from some others. This is done because mercury has a notable effect on the kidneys, a tendency to cause irritation and to retard their function. Much of the salvarsan is eliminated by them. We thought that toxic salvarsan effects were noted more frequently when mercury had first been used than without it, so we now postpone the mercury.

Some still ask the question, "Which is the more potent, mercury or salvarsan?" This is never a proper question, as it is never one of relative potency. Either in itself is insufficient; both should be used to obtain the best results. It will be noted that no mention has been made of potassium iodid. This is deliberate, as potassium iodid has no place in the treatment of primary or secondary syphilis. Later in the disease it is useful in certain stages.

Thus far we have considered a disease relatively readily recognized, running a rather definite course and rather amenable to proper treatment. If we but knew it, however, we probably would see many more patients in the later stages than we do in the earlier ones.

Once the second stage is passed, the lesions are so varied, the symptoms so atypical, and manifestations so multitudinous, that it is small wonder we do not suspect every one.

On this account in our own hospital we make routine examination of the blood of patients admitted, and even by this means do not recognize them all. The Wassermann reaction, present in practically 100 per cent. of all late primary and secondary cases, is only positive in about 50 to 60 per cent. of later cases.

In those forms affecting the central nervous system we are materially aided in our diagnoses by examination of the spinal fluid, a topic that we have elsewhere taken up in detail and one that will here only be mentioned.

In the average active tertiary lesion the Wassermann reaction is usually positive, but its absence should not be considered to eliminate the possibility of the disease. Among our series are gummata of the cranium, the ear, the eye, the bones and the septum of the nose, the soft palate, the tongue, the lip, the throat, the stomach, the intestine, the aorta, the liver, the kidneys, the pelvic bones, the upper arm, the forearm, the wrist, the fingers, the thigh, the lower leg, the feet, the brain and the spinal cord.

Did time permit, illustrative cases of each of these and other locations might be cited in detail. The majority have shown very great clinical improvement, a large number are clinically well and many in addition show negative blood and spinal fluid tests.

The methods of treatment here employed have been varied. As a rule, however, those in which the central nervous system has not been involved have been placed at once upon potassium iodid, increasing to the limit of tolerance. This drug is of no effect whatever upon the treponema or its activity. It is reputed to be efficient as a means of softening or dissolving various pathologic deposits. Now in tertiary syphilis, the difficulty of treatment lies in the fact that the microorganisms have "dug themselves in" or been more or less encapsulated, so that the parasitocidal agents, mercury and salvarsan, cannot get at them. The iodids are accordingly used as a means of shelling the trenches, opening up the shelters and forcing the fight in the open. This bombardment is begun at once and is continued during the entire main attack which is otherwise conducted as in the first and second stages of the battle. The results have been most gratifying. Not only do old lesions show very prompt and rapid improvement where they are under observation, but many obscure symptoms have simultaneously disappeared. Even a case of aortic aneurysm with dyspnoea, angina, dysphagia and chronic hoarseness from recurrent laryngeal pressure, has been transformed from an invalid to a ruddy, robust man who walks five miles a day and whose only hoarseness is when he tries for the high notes in singing.

Two men who came to the hospital for suspected sarcoma of the right arm and amputation of the large tumor masses now possess normal right arms and are back at their usual occupations, one a plumber, the other running an automobile.

Several cases, mostly children, have come to us for severe ocular syphilitic manifestations, and here again distinct amelioration has followed. Perforations of the nasal septum and of the soft palate have promptly filled in after proving resistant to all other forms of treatment.

In children under two years, where the veins are small and delicate, salvarsan has been repeatedly injected by the route of the superior longitudinal sinus without any harm and with excellent clinical results.

Not once during four years has it been necessary to dissect a vein.

In treating the disease as it involves the central nervous system we usually first begin with the intravenous method alone, but usually find it necessary to employ the intraspinal route sooner or later. Concerning the efficiency of this latter in many cases there can be no doubt. Our records show a number of cases where simple intravenous treatment has been given without benefit, followed by disappearance of symptoms when the intraspinal method was employed.

Proper presentation of this phase would require a separate

paper. Suffice it to say that our method is the one using salvarsanized serum of from 40 to 100 per cent. strength.

SUMMARY

1. Salvarsan occupies first place as a therapeutic agent, with mercury as a necessary co-worker in all stages.

2. Potassium iodid is not a treponemacide but is nevertheless of benefit in tertiary and late manifestations when used in association with mercury and salvarsan.

3. Syphilis is curable both symptomatically and serologically. The chances of cure steadily increase with progressively early treatment and decrease as months and years progress without treatment.

4. Many symptomatic cures can be obtained in late cases and even here serological cures should not be despaired of.

THE EFFECT OF QUININ UPON THE AUDITORY FUNCTION. A PRELIMINARY REPORT

H. L. BABCOCK, M.D. Boston*

Of 275 cases either cited or detailed in the *Cyclopædia of Drug Pathogenesis*, to which quinin in some one of its forms had been given, 59 or 21.6 per cent. exhibited the symptom of tinnitus aurium. Several references are also made in the same work to the phenomenon of transient deafness caused by unusually large doses (e.g., 16 grams).

It is known that large doses produce hyperæmia and even hæmorrhage in the cochlea.

The above references suggested to the writer the desirability of determining the exact degree of deafness caused by definite amounts of quinin.

METHODS

Five healthy adult individuals were selected and careful examination made of the cochlea function in each case by the use of tuning forks, Galton whistle, monochord and audiometer.

The latter instrument was chosen because of its constant accuracy. Its operation is based upon the fact that constant sounds of a low intensity can be confined in a box, and that when an opening is made in this box the loudness of the sound passing through this opening will increase when the opening increases, and diminish when the opening diminishes. The structure of the instrument consists of a device for making a constant sound within

*Read before the Alethean Club of Boston, Jan. 11, 1918.

a sound-proof box (4"x4"x4"), having an opening which may be varied, and tubes to carry the sound from the opening to the ears.

Several audiometer readings were taken on each individual to establish the normal average.

The monochord of Struycken was substituted for the Galton whistle, as being an instrument which more accurately records variations of the upper tone limit. This instrument consists of a 60 cm. flat steel bar on which a steel wire with adjustable set-screw is strung to definite tension. The tension of this wire is accurately measured by a simple control device, by means of which a fixed standard of tone may be obtained.

A metal sliding-block traverses the steel bar from end to end, is held both to wire and bar by sliding spring-clips, and presents a sharp margin at the front surface of the bar over which it slides, so that the actual tone produced may be read on the combined scale, stamped on the flat surface of the bar. This scale is indicated in centimeters from 1 to 50, and a second musical scale is recorded from G⁷ to C⁴. On the superior surface of the bar the longitudinal vibrations are marked in thousands, in Roman numerals from 6 to 25, giving a longitudinally-vibrating range of tone from 6000 to 25 000 v.d. At the proximal end of the monochord is a rounded metallic button by which the apparatus may be pressed to the mastoid or brought in contact with any other bone surface.

The longitudinal tone is evoked by stroking the wire in its longitudinal axis with a metallic rubbing-flask filled with turpentine or benzene, supplied with an automatically moistened felt disc. In moving the sliding-block up or down, thus shortening or lengthening the wire, the longitudinally vibrating tone is made respectively higher or lower.

For this work Merck's sulphate of quinin (crystals) was used, each prover being given a 0.5 gram capsule as the initial dose. Records of symptoms and the appearance of the tympanic membranes, audiometer and monochord readings were made at frequent intervals following the administration of the drug.

RESULTS

Following is a detailed record of each case to date:

No. 1

July 9, 1914, M. T. $\frac{R}{L}$ neg. Aud₃ $\frac{R}{L}$ $\frac{86}{85}$ C³² $\frac{0}{0}$ C^{2d} $\frac{+}{+}$ Galton $\frac{1.0}{0.5}$ *

16, Aud₃ $\frac{88}{87}$

Aug. 14, Aud₃ $\frac{89}{89}$ Mono $\frac{X}{X}$

28, 0.5 gram quinin sulphate given at noon.

At 1.15 P. M. no symptoms. Aud₃ $\frac{91}{91}$ Mono $\frac{X}{XX}$

At 3.30 high-pitched singing tinnitus and sense of fulness in ears (this after 1½ hours of tennis followed by a cold shower).

M. T. $\frac{R}{L}$ Faint pinkish tinge Aud₃ $\frac{86}{87}$ Mono $\frac{XVIII}{XIV}$

No. 2

July 10, 1914, M. T. $\frac{R}{L}$ cloudy C³² $\frac{+}{+}$ Galton $\frac{0.7}{0.7}$ Aud₃ $\frac{90}{91}$

16, Aud₃ $\frac{91}{90}$

Aug. 12, Aud₃ $\frac{91}{92}$

14, Aud₃ $\frac{91}{92}$ Mono $\frac{XV}{XVI}$

28, 0.5 gram quinin sulphate at 11.10 A. M.

At 12.30 P. M. no tinnitus. Slight feeling of fulness in head.

Aud₃ $\frac{91}{92}$

No. 3

July 10, 1914, M. T. $\frac{R}{L}$ neg. C³² $\frac{+}{+}$ Galton $\frac{0.7}{0.7}$ Aud₃ $\frac{89}{90}$

13, Aud₃ $\frac{90}{91}$

16, Aud₃ $\frac{89}{90}$

Aug. 14, Aud₃ $\frac{91}{91}$ Mono $\frac{XXV}{XXV}$

28, 0.5 gram quinin sulphate at 12 noon.

At 3.30 P. M. no symptoms Aud₃ $\frac{91}{91}$

Sept. 9, Aud₃ $\frac{93}{92}$

*In all results expressed as fractions, the numerator is the reading for the right ear; the denominator for the left.

Abbreviations. M. T. = membrana tympani
Aud. = audiometer
Mono. = monochord

No. 4

July 10, 1914, M. T. $\begin{matrix} \text{R neg.} \\ \text{L neg.} \end{matrix}$ $\text{C}^{32} \begin{matrix} + \\ + \end{matrix}$ Galton $\begin{matrix} 0.5 \\ 0.5 \end{matrix}$ Aud₃ $\begin{matrix} 92 \\ 91 \end{matrix}$

Aug. 17, Mono $\frac{\text{XIII}}{\text{XV}}$ Aud₃ $\frac{91}{92}$

Sept. 10, 0.5 gram quinin sulphate at 11 A. M.
At noon slight constricting frontal headache.
At 1 P. M. —Gone. No tinnitus.

" " Aud₃ $\frac{92}{92}$ Mono $\frac{\text{XIX}}{\text{XIX}}$ M. T. $\begin{matrix} \text{R} \\ \text{L} \end{matrix}$ Slightly pink " "

No. 5

July 10, 1914, M. T. R Cloudy. Scar anteriorly
 L Slight congestion post. malleus. $\text{C}^{32} \begin{matrix} + \\ + \end{matrix}$ Galton $\begin{matrix} 0.5 \\ 0.5 \end{matrix}$ Aud₃ $\begin{matrix} 90 \\ 90 \end{matrix}$

13, Aud₃ $\frac{91}{91}$

16, Aud₃ $\frac{89}{88}$

Sept. 9, 0.5 gram quinin sulphate at 10 A. M.

At 12.30 P. M. M. T. $\begin{matrix} \text{R slight congestion, (uniform)} \\ \text{L neg.} \end{matrix}$ Aud₃ $\frac{88}{91}$

Has faint, high-pitched tinnitus when audiometer tips are in ears.
Not noticeable at other times.

Mono $\frac{\text{XIV}}{\text{XVI}}$

Sept. 10, 1914, No further symptoms. M. T. $\begin{matrix} \text{R Still slight congestion} \\ \text{L Neg.} \end{matrix}$

Aud₃ $\frac{88}{92}$ Mono $\frac{\text{XIII}}{\text{XVII}}$

CONCLUSIONS

There is a normal variation in the hearing power of an individual.

The monochord in its present form is not suitable for practical use.

0.5 grams quinin sulphate may be sufficient to increase the excitability of the cochlea by producing tinnitus, but is not sufficient to decrease the conductivity of the auditory nerve.

EDITORIAL

BOOKS for review, exchanges and contributions — the latter to be contributed to the GAZETTE only and preferably to be typewritten — subscriptions and all communications relating to advertising and other business should be sent to THE NEW ENGLAND MEDICAL GAZETTE, 80 East Concord Street, Boston. Make checks payable to THE NEW ENGLAND MEDICAL GAZETTE.

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EMETIN AND AMŒBIC DYSENTERY. THE RELATION OF DRUGS TO IMMUNITY

In a recent discussion of the relation of drugs to immunity¹ we commented on the prevailing theory of the action of emetin in amœbic dysentery, and pointed out similarities in the pathogeneses of emetin and the *Entamœba histolytica*. A recent account of experiments on the therapeutics of amœbic dysentery has disclosed evidence which makes it necessary to revise the current simple conception that the action of emetin is purely amœbicidal.

Dale and Dobell² have on repeated trials been unable to confirm the amœbicidal action of extremely high dilutions of emetin which had been reported by previous investigators. To be sure, they were able to demonstrate that in sufficient concentration emetin exhibits a power of killing *Entamœba histolytica*, but this concentration was in all cases far beyond that which could be produced in the circulation of a patient without killing him. Moreover, the amœbicidal theory, as explanatory of the therapeutic effect of emetin, is only permissible if it can be shown that other alkaloids which have no specific effect in the therapeutics of dysentery have a less powerful effect on amœbæ. But this is by no means the case; quinin, which is not a specific for dysentery, exercises a more powerful amœbicidal effect than does emetin. Furthermore, what is even of greater significance, is the experimental demonstration that methyl-psychotrin, which differs from emetin only by two hydrogen atoms, is more strongly amœbicidal *in vitro*, but is apparently wholly devoid of any therapeutic effect in human infection, even though it may be given in relatively enormous doses

¹ GAZETTE, 1917, lii, 549

² Dale, H. H. and Dobell, C.; *Experiments on the therapeutics of amœbic dysentery*, J. Pharmacol. and Exper. Therap., 1917, x, 399-460

because of its low toxicity. Such a contrast between the therapeutic values of emetin and methyl-psychotrin obstructs the theoretic reconciliation of the action of emetin on isolated amœbæ with its curative action in dysentery. The alkaloid and the amœbæ are clearly not the only factors, then, in the cure of dysentery by emetin. We must admit the participation of the host in the recovery. In support of such participation Dale and Dobell have shown that emetin did not appreciably affect the course of amœbic dysentery in the *kitten* infected by a strain of amœba recovered from a case of *human* dysentery which had been cured by emetin.

The view that the curative powers of emetin are due to its primary action on the host, although it has not the attractive simplicity of the current theory, harmonizes with facts which the parasitocidal conception fails to explain. Although there are practically no facts on which to erect a substantial theory of the manner of action of emetin on the host which can explain its beneficial effect in amœbic dysentery, we must suppose that the resistance of the host's cells to amœbic aggression is increased.

There are indications which point to a connection between the therapeutic efficiency of emetin and its irritating effect on the alimentary mucous membranes. In fact, of the alkaloids studied, those which are curative in dysentery, emetin and cephælin, are distinguishable from the non-curative methyl-psychotrin, by greater toxicity for the host, not by greater toxicity for the amœbæ; and the authors hazard the prediction that demethoxy-emetin — the most actively amœbicidal of the group and at the same time the least toxic to mammals — will be found to have no-curative action. They also state their belief that further investigations will be disappointing if they continue along the lines made familiar by Ehrlich, *i.e.*, striving to discover derivatives or homologs of emetin, which have stronger "parasitotropic" properties as shown by toxic action on amœbæ and weaker "organotropic" properties as shown by lessened general toxicity or tendency to cause vomiting and gastro-intestinal irritation in the host. Failure to cure or even to retard the course of amœbic infection in the kitten, even when the infecting strain was one which a thorough course of emetin eradicated from the human donor, is a very suggestive observation. Since the parasite and the drug were identical, the difference in the results of treatment in the two instances must be attributed to differences between the hosts in their response to the drug. This observation illustrates anew the danger which exists in applying the results of therapeutic research on animals to the treatment of human ailments.

A more completely analyzed knowledge of the pharmacologic action of emetin and related alkaloids on the mammalian organism will undoubtedly lead to a clearer conception of the manner in

which the host contributes to their therapeutic effect in amœbic dysentery.

These experimental data and theoretical considerations which Dale and Dobell have brought forward are of stimulating interest in relation to therapeutic research. Their appearance is especially timely in a period when the greater part of investigative work in infectious diseases is being planned and pursued with but two factors in mind — the drug and the infecting organism. Any premises are bound to be incomplete if they do not take strict account of the *infected* organism, the factor which is of prime importance.

S. B. H.

VOLUNTEER MEDICAL SERVICE CORPS

For the purpose of completing the mobilization of the entire medical and surgical resources of the country, the Council of National Defense has authorized and directed the organization of a "Volunteer Medical Service Corps," which is aimed to enlist in the general war-winning program all reputable physicians and surgeons who are not eligible to membership in the Medical Officers' Reserve Corps.

It has been recognized always that the medical profession is made up of men whose patriotism is unquestioned and who are eager to serve their country in every way. Slight physical infirmities or the fact that one is beyond the age limit, fifty-five years, or the fact that one is needed for essential public or institutional service, while precluding active work in camp or field or hospital in the war zone, should not prevent these patriotic physicians from close relation with governmental needs at this time.

It was in Philadelphia that the idea of such an organization was first put forward, Dr. William Duffield Robinson having initiated the movement resulting in the formation last summer of the Senior Military Medical Association with Dr. W. W. Keen as president — a society which now has 271 members.

Through the Committee on States Activities of the General Medical Board the matter of forming such a nation-wide organization was taken up last October in Chicago at a meeting attended by delegates from forty-six states and the District of Columbia. This Committee, of which Dr. Edward Martin and Dr. John D. McLean — both Philadelphians — are respectively chairman and secretary, unanimously endorsed the project. A smaller committee, with Dr. Edward P. Davis, of Philadelphia, as chairman, was appointed to draft conditions of membership, the General Medical Board unanimously endorsed the Committee's report, the Executive Committee — including Surgeons-General Gorgas of the

Army, Braisted of the Navy, and Blue of the Public Health Service — heartily approved and passed it to the Council of National Defense for final action, and the machinery of the new body has been started by the sending of a letter to the State and County Committees urging interest and the enrollment of eligible physicians.

It is intended that this new Corps shall be an instrument able directly to meet such civil and military needs as are not already provided for. The General Medical Board holds it as axiomatic that the health of the people at home must be maintained as efficiently as in times of peace. The medical service in hospitals, medical colleges and laboratories must be up to standard; the demands incident to examination of drafted soldiers; including the reclamation of men rejected because of comparatively slight defects; the need of conserving the health of the families and dependents of enlisted men and the preservation of sanitary conditions — all these needs must be fully met in time of war as in time of peace. They must be met in spite of the great and unusual depletion of medical talent due to the demands of field and hospital service.

In fact, and in view of the prospective losses in men with which every community is confronted, the General Medical Board believes that the needs at home should be even better met now than ever. The carrying of this double burden will fall heavily upon the physicians, but the medical fraternity is confident that it will acquit itself fully in this regard, its members accepting the tremendous responsibility in the highest spirit of patriotism. It will mean, doubtless, that much service must be gratuitous, but the medical men can be relied upon to do their share of giving freely, and it is certain that inability to pay a fee will never deny needy persons the attention required.

It is proposed that the services rendered by the Volunteer Medical Service Corps shall be in response to a request from the Surgeon-General of the Army, the Surgeon-General of the Navy, the Surgeon-General of the Public Health Service, or other duly authorized departments or associations, the general administration of the Corps to be vested in a Central Governing Board, which is to be a committee of the General Medical Board of the Council of National Defense. The State Committee of the Medical Section of National Defense constitutes the Governing Board in each State.

Conditions of membership are not onerous and are such as any qualified practitioner can readily meet. It is proposed that physicians intending to join shall apply by letter to the Secretary of the Central Governing Board, who will send the applicant a printed form, the filling out of which will permit ready classification according to training and experience. The name and data of applicants will be submitted to an Executive Committee of the State

Governing Board, and the final acceptance to membership will be by the national governing body. An appropriate button or badge is to be adopted as official insignia.

The General Medical Board of the Council of National Defense is confident that there will be ready response from the physicians of the country. The Executive Committee of the General Medical Board comprises: Dr. Franklin Martin, Chairman; Dr. F. F. Simpson, Vice-chairman; Dr. William F. Snow, Secretary; Surgeon-General Gorgas, U.S.A.; Surgeon-General Braisted, U. S. Navy; Surgeon-General Rupert Blue, Public Health Service; Dr. Cary T. Grayson, Dr. Charles H. Mayo, Dr. Victor C. Vaughan, Dr. William H. Welch.

OBSERVATIONS ON THE MODERN TECHNIC OF CARING FOR CONTAGIOUS CASES

HAROLD L. LELAND, M.D., Intern, M.H.H.

Modern medical asepsis is based on the principle of contact infection, direct and indirect, as contrasted with possible air-borne infection. The case of contagious disease admitted to the modern contagious hospital today is received as a patient suffering from the diagnosed contagious disease and ALSO as a potential case of any other contagious disease. It is carefully isolated and known as a "detention case" during the average isolation period of the commoner communicable diseases until the physician in charge is satisfied that the case is incubating no other disease, whereupon it becomes classed as a "convalescent case" and is admitted to the general ward of cases suffering from similar complaints; or, developing some other condition — as scarlet fever with a latent development of measles incubating at the time of admission, — it is classed as a "barriered case" and is carefully isolated during the infective period of the superimposed measles.

Sterilized eating utensils, separate toilet articles, separate frocks and clean hands, are some of the detail in the precautions carried out to prevent transmission of the specific infection, or possible infection, to other cases.

Into this perfected régime — the technic of specialists in this branch of medicine — steps the general practitioner or consulting internist or surgeon, and immediately becomes a danger as a possible indirect carrier of contact-infected materials by his lack of familiarity with these essentials. He meets a technic with which he is unfamiliar: he dons the clean, uncontaminated frock and examines his case, comes in contact with the bed, infects his hands and then distributes the infection to the stethoscope or watch he takes

from his pocket beneath his frock, or to his handkerchief and later, through it, to his own nose the next time the handkerchief is used. He unwittingly smoothes his hair with his infected hand; if he wears no frock his coat sleeve may brush the contaminated bed. Then, after the damage is done, he insists upon using antiseptics and scrubbing to remove all traces of infective material from his hands, with never a thought for the infected handkerchief, stethoscope, pocket-lining, coat sleeve or hair, thus becoming a menace to his family, his friends, his other patients and the whole community.

The consulting surgeon dresses a discharging wound in a scarlet fever case with due surgical precautions, and then, his dressing done and his rubber gloves well contaminated with the virulent discharges, he places his hands in his pocket to extract a handkerchief, or the more comfortably to expatiate on the treatment of the case.

As surgical asepsis rests on its weakest element, on an unsterile glove, instrument or dressing, so the most elaborate technic in contagious cases is only as strong as the weakest link in the chain of contact infection; clean frocks, sterile tongue depressors and eating utensils are of no avail, incessant scrubbing by nurses will not prevent and medicines will not overcome infection transmitted by the careless or unskilled physician himself to another patient or healthy individual.

In these days of advancing medical science it behooves us to keep abreast of the times, to question our own technic in the treatment of our cases, to seek for possible errors whereby unwittingly we may be the source of cross-infection while treating contagious cases.

It is of vital importance to observe strict medical asepsis not merely in special contagious hospitals where habitual elaborate technic is practiced, but also in the general hospital and in private practice where cases of contagious diseases are met less frequently. It is there that the greatest of care must be taken to prevent transmission of infection among persons not thinking along "contagious lines." The undiagnosed but suspected case may be a source of great danger to the general ward, and until definite diagnosis can be made should be under the strictest precaution as a measure of protection for the other patients. Upon the attending physician rests the responsibility of these measures; and his orders to interns and nurses will not receive the necessary respectful attention unless he himself observes them and demonstrates their value.

That present-day methods are efficient and sufficient is shown by the fact that several different forms of contagious diseases may be treated in the same open ward without danger of cross-infection.

HOMŒOPATHY IN SAN FRANCISCO*

It was our privilege to call upon some of those interesting Hahnemannians of the Pacific, and first of all upon Dr. William Boericke. Probably no student of recent years who has sat under the Materia Medica chairs in our medical schools has not heard of Dr. Boericke, and made his acquaintance through the pages of that most useful textbook, his Pocket Manual of the Homœopathic Materia Medica. Surely students of materia medica have been most grateful to the authors of Guernsey's Key Notes, Allen's Primer, H. C. Allen's Key Notes and Characteristics, Arndt's First Lessons, Nash's Leaders, Boericke's Pocket Manual, and finally to that latest *vade mecum* of the student, Boger's Synoptic Key. No practitioner of medicine can be without these helpful friends; they are his constant companions, in the office, in the clinic, and at the bedside.

It was therefore with much pleasure that we looked into Dr. Boericke's cheerful countenance, and felt the warm grip of his hand. The writer has never heard any description of that mysterious inner or middle room that is common to the esoteric partnership of Drs. Boericke and Ward. Suffice it to say, that since the San Francisco fire of ten years ago, when, as explained by Dr. Boericke, the flames, by some miraculous shift of fortune, paused almost at his very door, and his own library was saved, he and Dr. Ward have been bringing together for mutual helpfulness and for a more permanent cataloguing, all these volumes, and it is their aim, only just in its infancy so to speak, to have an entire room devoted to shelving the various works that have been written on homœopathy. This room, which we were privileged to inspect, a large part of which is already occupied, is to be devoted entirely to homœopathy; in fact, according to Dr. Boericke, there is not to be a single work on anything but homœopathy in it. Surely this does credit to that type of homœopathy that one finds on the Pacific Coast. In fact it is said to have been the chief pride of Hahnemann College that its superb library of 2000 volumes, the nucleus bequeathed to it from the heirs of the Lilienthal and later by the Eckel estates, is probably the equal in size and excellence of that of many older and larger institutions.

With the recent change in management and affiliation, the present status of medical education in the Hahnemann Medical College is as follows: As above stated, the first step toward a complete department of homœopathy within the University Medi-

*Excerpts from a letter from Dr. B. C. Woodbury, Jr., Honolulu, Hawaii.

cal School is being realized, in accordance with the pre-arranged plan as follows:

“Beginning in August, 1913, all students matriculating in medicine must fulfill the requirements demanded by the University of California Medical School.”

Students in the first two years take all work in common; 32 hours of so-called “regular” and the same number of “homœopathic” materia medica are prescribed, and students elect either of these, and may be allowed to take both. In the third and fourth years all students take the same courses except in materia medica and therapeutics, which are also arranged in accordance with the elective system. And, finally, we here quote from the last annual announcement:

“Instruction in Homœopathy shall be in charge of two professors to be added to the Medical Faculty — a Professor of Homœopathic Materia Medica and a Professor of Applied Homœopathic Therapeutics will be in charge of the clinical work to be substituted for similar work in the Department of Medicine.”

Dr. William Boericke received the appointment as Professor of Materia Medica and the first course of lectures was begun in January, 1916. Dr. J. S. Brooks of San Francisco has recently been appointed as Dr. Boericke’s assistant in the Chair of Homœopathic Therapeutics and has already entered upon his work in the University.

Hahnemann of the Pacific, which for long has held exceptionally fine clinical facilities for its students through the wards of Hahnemann Hospital and the San Francisco Hospital, will now furnish additional advantages through its affiliation with the Medical Department of the University of California.

Among the strictly homœopathic institutions of San Francisco, listed in “Hospitals and Sanitoriums of the Homœopathic School of Medicine,” issued by the Council of Medical Education of the American Institute of Homœopathy, are to be found the Hahnemann Hospital of 90 beds, and a property valuation of \$150 000; and the Florence Ward Sanatorium of 47 beds, valued at \$175 000. The latter institution is at present a private institution and wholly under homœopathic control; whereas the Hahnemann hospital admits all reputable physicians, regardless of school, but includes only the results of homœopathic treatment in its records. The mortality rate of these two institutions are respectively: Hahne-

mann Hospital, 4.2 per cent.; Florence Ward Sanatorium, 2.7 per cent.

Surely this is an excellent record for these homœopathic institutions. With the passing of the Hahnemann College of the Pacific into its larger affiliation with a great University there is some loss, no doubt, but at the same time a greater gain. Just how far this gain in prestige may redound to the justification and glory of its purposes remains to be demonstrated. It is to be hoped that the bright prospects held by its former guardians and those in whom its future is entrusted may be most encouragingly fulfilled. The fact of the establishment of a separate department of homœopathic instruction in the University of California has apparently, for the present, at least, removed from the student body a comparatively large amount of teaching material, in the personnel of the former Faculty of the Hahnemann College, which, as we understand it at present, will simply be retained for clinical instruction within the walls of the Hahnemann Hospital and the Hahnemann Polyclinic. It would seem, therefore, to the writer, that should the future of homœopathy seem to warrant it, the present merger of Hahnemann within the University might make possible sufficient teaching force for the establishment at some future time of a Post-Graduate College of Homœopathy, that shall justify the apparent demise of an institution, which, from the year 1884 to the present, has graduated so many excellent students.

In the words of Dr James Ward:

“Hahnemann of the Pacific was conceived by the best men of the Coast when in the early eighties it announced its curriculum and opened its doors and has since held sessions yearly, having graduated up to the present time 309 students. It seemed for the best interests of homœopathy on the Pacific Coast that there should be presented last year to the Board of Regents of the University of California a plan for their consideration and adoption, the purpose of which was to lead forward in a movement towards the perpetuation of homœopathic education in California. It proved to be a psychological moment for the University, and it certainly was for Hahnemann College. We believe that to forward the educational movement in the face of ever-increasing educational exactions there must be substantial endowments and a prestige backed by the State in order that there should be endurance and protection.”

Dr. Ward has outlined in full the basis upon which this affiliation came about, and the conditions upon which it is hoped it may be maintained, in his report to the Bureau of Homœopathy which

was published in the Journal of the American Institute for January, 1917.

Just a few words regarding the man who has for the most part brought about this new affiliation. The writer was ushered with much ceremony, under the guidance of Dr. Boericke, into the consultation room of Dr. James Ward. To those who have not previously met Dr. Ward, he comes to one with something of the wonder of the budding flower that bursts into bloom, almost before your very eyes. He is a man of today; keen, alive, and active in the interests of the living present. His vivacity is remarkable and his enthusiasm is unbounded.

To one schooled in the placid conversation of New England this prodigy of the Western world is alert, interesting, unique. To our mind he represents the union of the East and West; he is the William Todd Helmuth of the Pacific. Nor does his apparent enthusiasm in the interests of homœopathy limit itself to the practice of surgery, in which his place has long been established. For his diligence in the line of homœopathic therapeutics is equaled only by his ability in the appropriation of it. To one familiar, either in name or in content, with President Eliot's much-heralded five-foot shelf of world classics, there must be no less delight at viewing Dr. Ward's three-foot shelf of homœopathic classics. For here within easy reach of his eager hand lie, in handsome leather covers, such incomparable writers as Kent, Allen, Hering, Farrington, Nash, *et al.*, so neatly bound that but to view them is an inspiration. Surely in our modern day of surgical practice, the physician will do well to have close at hand this three-foot shelf of homœopathic masters. It cannot fail to be noted in modern medicine, that along with surgical cases and pre-surgical conditions there are many medical ones, which, if carefully prescribed for, will not fail to make many a seeming surgical case a purely medical one, and many a tentative surgical condition amenable to the gentler measures of homœopathic medication.

No trip to San Francisco would be complete without a visit to that younger exemplar of the surgical art, Dr. Richard Tomlinson; and it was our pleasure to pay the doctor a brief visit. Dr. Tomlinson, in addition to the practice of surgery, finds much interest in the study and treatment of tuberculosis, and to this end is at the head of a sanatorium for the treatment of tuberculous conditions in the southern part of the state.

At the close of this most profitable afternoon spent in the pursuit of things homœopathic, we were fortunate in finding Dr. Philip Rice, who was as gracious as he was enthusiastic in reviewing for our benefit some of the interesting phases of drug study which he has recently elaborated before the American Institute, the California State Society, and elsewhere. Dr. Rice would seek the

measure of a man or a patient, in accord with deeper scientific research according to well-recognized physiological standards, and by raising the patient to these requirements he would thus elevate the race.

This interview proved none the less interesting from the fact that Dr. Rice, while less familiar with Honolulu, spent several years in practice in Hilo, on the Island of Hawaii, in association with his brother, Dr. Milton Rice, who is still in practice there. Both Dr. Rice and his brother are particularly interested in ophthalmology and otology. The quality of homœopathy for which both these students of Hahnemann stand is well known to all.

Having thus passed in review a few of the interesting Hahnemannians of the Pacific, on the following morning, promptly at 8.30 o'clock, we visited, through the kindness of Dr. Ward and the courtesy of Dr. E. H. Howell, Dr. Ward's morning clinic, or rather were admitted to the operating room to witness an interesting private case — the removal of a large uterine fibroid. This privilege was extended till the last moment, when the time for going on board our steamer arrived, and we bade a reluctant adieu to all at the Hahnemann who had been so kind.

With the excellent clinical facilities afforded by this hospital, and the other private and public institutions which are open to the students of medicine in San Francisco, may we not hope that at some future day, when the growing interest in prescribing as set forth by Hahnemann shall have become more general, there may be established in this great cosmopolitan center of the Pacific (possibly to fill the place of that most excellent institution that is fast losing its present individuality) a modern and up-to-date establishment for graduate instruction?

Already this idea has been materialized in the establishment of Post-Graduate School of Homœopathy in Chicago; and it would seem only reasonable to suppose that with the curtailment in number of our homœopathic institutions for undergraduate instruction, there should be sufficient need for courses in homœopathic prescribing, to support, in addition to that already established in the Middle West, at least two more of similar nature, one on the Atlantic Coast, either at Boston or New York, better perhaps the latter, owing to the wealth of its clinical and teaching facilities; and finally, another on the site of the former Hahnemann Medical College of the Pacific.

HOMŒOPATHIC PERIODICAL LITERATURE

The Journal of the American Institute of Homœopathy,

January, 1918

Beginning with this issue, the Journal of Ophthalmology, Otology and Laryngology merges with the Journal A. I. H. Dr. G. W. Mackenzie will edit the department formerly covered by the Journal. The affiliated societies of the A. I. H. are also represented by departmental editors: Surgery and Gynæcology, DeWitt G. Wilcox; Obstetrics, Florence N. Ward; Physical Therapeutics, William H. Dieffenbach.

1. *Roentgenological examination of the gastro-intestinal tract.* 849. Thomas, C. C.

2. *Cuprum Arsenicosum: The effect on the excretion of water by the kidneys. An experimental study.* 857. Sappington, S. W., and Wurtz, J. G.

Considerable doses of 2x tablets were given to nine provers. No effect upon the total amount of urine was discovered. The authors suggest that clinicians should carefully review their data on the reputed action of the drug as a diuretic in nephritis and uræmia.

3. *The homœopathic principle: its universal application.* 863. Ward, J. W.

"It will only be through accuracy in diagnosis, clear elimination as far as possible of the causes of disease, and finally precision in the choice of the remedy, that homœopaths can ever hope to gain that recognition which their accumulated knowledge justifies. Certainly it is now, if ever, that a century of homœopathic existence should speak out in no uncertain terms. It matters little whether the homœopathic school endures as a school in the final analysis, but it must remain as such until its philosophy is approved and its recorded results recognized. This will come only through earnestness, accuracy and honesty in reporting."

4. *Medication in homœopathic hospitals.* 879. Beebe, H. M.

At the University Homœopathic Hospital, in Ann Arbor, 96.7 per cent. of all internal medication was purely homœopathic.

5. *Minor surgical cases cured by radium.* 881. Bailey, E. S.

6. *Procidencia in nulliparous women: report of seven cases with surgical measures devised for their relief.* 884. Ward, F. N.

7. *Laboratory aids to the obstetrician.* 894. Blodgett, S. H.

In B.'s estimation, measurements of urea output are of the greatest importance in anticipating puerperal convulsions.

8. *Placenta prævia.* 898. Huntoon, G. A.

9. *Protein dietetics and immunity.* 901. Baker, W. F.

The actual presentation of this paper was accompanied with forty-six lantern-slide illustrations. Probably they helped to

make the subject clearer. As it is presented here, it is vague, disconnected, and full of misleading and inexact statements. It reads as if it were an unmodified transcription of a stenographer's notes.

10. *Paralysis in poliomyelitis: Fundamentals in treatment.* 906. Cole, H. P.

11. *Sinus thrombosis: two cases.* 909. Phillips, W. H.

12. *Glaucoma. Why I prefer the Elliot corneo-scleral trephining in operative treatment.* 917. Norton, A. B.

February, 1918

13. *The Halifax disaster.* 958. Wilcox, DeW. G.

14. *Wanted — A radical change in medical education.* 962. Haseltine, B.

15. *Acute poliomyelitis.* 965. Clement, S. A.

16. *Action of gelsemium upon intestinal movement.* 969. Hinsdale, A. E.

"Gelsemium produces an immediate relaxation of intestinal tissue, the average being a drop from the normal height of peristaltic activity, of 2.5 centimeters. There is also produced a slight reduction in the amplitude or vigor of the peristaltic movements, but this is not nearly as noticeable as is the relaxation. The rate of the movement of the intestine is not materially affected."

17. *Homœopathy: Her vulnerable points and her strongholds.* 970. Hanks, M. E.

"We should not be the last to admit that there are thousands of unverified symptoms that have been copied again and again without reason. The result is that our own teachers of materia medica are forced to use the laboratory textbooks written by old school men because they find them more exactly in accord with repeated findings. A textbook is needed which treats of homœopathic drugs in accord with scientific facts and present-day phrasology.

"We all know the imperative need of a Materia Medica that eliminates the incoherence, the hysteria and the absurd imaginings that are clearly not the legitimate result of drugs ingested by healthy subjects."

"There is another important reason why no drug should be diluted until it loses its identity. The container must contain the substance named on the container. Otherwise we invite investigation under the pure food law."

"Clinical evidence that is not in exact accord with facts and that is not hedged about by reliable data, observations and measurements, is of no value and has no proper place in the medical world. Remember the mass of clinical evidence from suggestive therapeutics and the patent medicine fakers who produce letters by thousands from 'grateful patients' cured of heart and kidney

diseases, cancer and tuberculosis by concoctions that contain little or no curative agents and much bad whiskey.

"The legitimate question of diagnosis arises.

"You say of the Christian Science cures, 'I doubt the diagnosis.' The adherent of the dominant school says of you, 'I doubt the diagnosis.' When I claim to cure epilepsy in some phenomenal fashion, you are right in asking for proof that it was not hysteria. All claims from today on, made by anyone of any school, in order to carry conviction, must be backed up by incontrovertible evidence and not by individual judgment and opinion alone."

"The organization-affiliation movement is rapidly changing one of the vulnerable points in the defenses of homœopathy to one of her strongholds."

"Carefully edited hospital reports collected each year from cities all over the United States and put before our students of medicine in a concise, edifying form would do great good. If the data were well handled, the argument would be incontrovertible and well worth the effort in propagandism.

"A tangible knowledge of the properties owned or controlled by our school has been given us by Dr. Dewey. These properties are evidence of stability, and the millions of dollars represented prove that homœopathy has a permanency and a power that must be reckoned with.

But the greatest asset the homœopathic school possesses is not her hospital records, nor yet her properties, but her scientific men who have shown in the various laboratories of our colleges such a splendid spirit of investigation. These men are important strongholds. Their loyal, unselfish devotion everywhere is manifest and they have accomplished much, but if they were liberated from financial and pedagogical duties and organized for team work, in one year the material thus accumulated would greatly enhance our literature and give an importance and permanency to our school that nothing else can give. Remember that on the day that one of these young scientists is lost to our school or is diverted from his task, on that day one of our strongholds has fallen. Men, vigorous, honest men, with big ideas, with wise directing forces, are our only invulnerable strongholds."

18. *Steel bands in the treatment of fractures.* 987. Kline, B. E.

19. *The selection of technic in the operative treatment of fractures.* 991. Beebe, H. M.

20. *The anæsthetic risk in obstetrics.* 997. Costain, T. E.

21. *Cæsarean section: indications pro and con.* 999. Weiss, F. E.

22. *Clinical results from radium.* 1009. Alliaume, C. E.

23. *Picric acid and its experimental use in ophthalmology.* 1017. Muncy, W. M.

24. *School hygiene and health supervision: A study of special phases.* 1027. Sage, F. C.
 25. *Physical therapeutics.* 1016. Dieffenbach, W. H.

Revista de Homœopatia Practica, Barcelona. December, 1917

26. *Frio (tratamiento de la sensacion de).* Cold (treatment of sensation of). 397. Olivé.

27. *Epilepsia.* 400. Montana, P.

The remedies most frequently indicated in epilepsy are *argentum nitricum*, *arsenicum album*, *atropin*, *belladonna*, *cicuta*.

28. *Carboneum sulphuratum.* 403. Vinyals, A.

Although this remedy is not used very often it has given good results in chronic arthritis, in chlorosis, in debility due to alcohol, in venous stasis of various organs, and in swelling of the thyroid gland and lymphnodes.

29. *Fiebre de Malta* —(*varios casos de*). Malta fever. 414. Moner, F.

30. *Ulcera Gastrica.* 417. Ballester, P.

31. *Método de Carral en las heridas infectadas.* Carrel's method of treating infected wounds. 423. Torrella, A.

To be effective and isotonic the solution must contain 0.475 per cent. available chlorin. Dakin's formula is:

CaOCl ₂	184. gms.
Na ₂ CO ₃	92. "
NaH ₂ CO ₃	76. "
H ₂ O	10. L.

This formula will give an isotonic solution if the chlorid of lime contains at least 25 per cent. chlorin. The commercial product contains less than this and hence unfavorable results are obtained. Chemical tests for the determination of the strength of the chlorid of lime are given in the article.

Iowa Homœopathic Journal. December, 1917

32. *Systemic disturbances from foci of infection.* 9. Marson, H. F.

33. *Cimicifuga racemosa.* 16. Spreng, T. F. H.

34. *Gonorrhœa in the female.* 20. Hatch, A. H.

35. *Children in relation to the discovery of pulmonary tuberculosis.* 24. Edmundson, F. B.

Advocates careful x-ray examination of suspected cases, as demonstrating lesions otherwise inaccessible to the diagnostician.

Homœopathic World. October, 1917

36. *Non-commercial chloroform; a proving.* 449. MacFarlan, D.

The 6x potency was used, with water as a menstruum. The

chief symptoms produced were: weakness, dizziness, thirst, easy perspiration, some looseness of the bowels, and disturbed sleep.

37. *Ammonia (liquid and carbonate) in pyæmia, etc.* 458. White, E. C.

A very sketchy report of two cases said to have shown improvement under *ammonia*.

November, 1917

38. *Silica.* 494. (Anon.) A review.

39. *Phosphoric acid as a vulnerary.* 501. White, E. C.
Case reports so incomplete as to be of little value.

40. *Some aspects of medical education.* 502. Moir, B.

December, 1917

41. *Veratrum album.* 537. (Anon.) A review.

42. *Platinum.* 550. (Anon.)

43. *Indications for use of physical stimuli.* 556. Wilde, P.

44. *Formica rufa in headache.* 557. Dr. Goldsbrough.

Found valuable in the case of woman under nervous strain who developed an intense throbbing headache, worse on awaking, and especially worse on washing the face, neck or body.

British Homœopathic Journal. November. 1917

45. *Strangeness of homœopathy.* 307. Wheeler, C. E.

A scholarly and well-written discussion of several features of homœopathy.

Homœopathic Recorder. December, 1917

46. *Doctrine of signatures in medical lore.* 531. Ramseyer, A. A.

To the student of medical history an interesting paper, but hardly of much value to the practitioner. Unfortunately, the author attempts to apply the doctrine to present-day treatment; for instance, in speaking of *Gossypium* as a parturient, the writer says: "Is there anything strange that the same force which opens to cotton balls would also open the womb?" Again, the same drug is said to be of especial value to patients of a leukophlegmatic temperament, because, forsooth, of the white color of its fluff! Also squash should be a good galactagogue, inasmuch as that vegetable resembles a giant breast with its nipple. We venture to suggest that agaricus, from its resemblance to an umbrella, should be valuable in complaints following wetting, and that the quick and jerky movements of the *Pulex irritans* most highly recommend that domestic pet as a remedy in chorea!

47. *Single symptom cures.* 551. Sarkas, J. N.

Argentum nitricum 30x is said to have cured a case of malaria,

fondness for sugar being the symptom on which it was prescribed. The Food Administration should appreciate this hint.

48. *Gleanings by the wayside*. 553. Jones, E. G.

When we read Dr. Jones' diatribes against allœopaths and surgeons, we sometimes fear that other (and thorough) gleaners have passed before.

The Chironian. November, 1917

49. *Building the Hospital — organization and methods*. 187. Bartine, O. H.

50. *Materia Medica*. 195. Coleman, D. E. S.

A review of digitalis, presented in a manner devised by the author in order to facilitate study.

51. *Asclepias tuberosa*. 201. Blinn, J. F.

Report of proving on two men (using the 1x dilution) with pathogenetic studies on rabbits as well. Dr. Blinn concludes: " — Its effects are principally functional, acting especially upon the muscles. It would appear to be of service in various forms of myalgia; in lumbago, when the pains in the lumbar region are severe, and especially if the pains extend along the back to the shoulders; also in pleurodynia when the pains are shooting in nature, when aggravated by coughing and during respiration.

December, 1917

Directory number.

The Clinique. November, 1917

52. *Treatment of pneumonia*. 490. Halbert, H. V.

The author lays stress on the fact that in pneumonia we are dealing with a general infection. In other words, we must treat the patient, not alone the pneumonic area alone. Symptoms of toxæmia must be watched for, and eliminative measures, designed to forestall them, employed.

53. *A study of pneumonia*. 499. Barnhizer, J. G.

54. *My experience with pneumonia*. 503. Starr, N.

December, 1917

55. *Tetanus and its treatment*. 535. Kahlke, C. E.

The prophylactic use of antitoxin is highly recommended, and the employment of 25 per cent. magnesium sulphate solution subcutaneously or intramuscularly is said to be valuable in subduing the convulsions.

56. *The use of omental grafts in surgery*. 540. Chislett, H. R.

Omental grafts are found valuable in preventing peritoneal adhesions. Their successful use requires: a clear field; sharp dissections of adhesions; absolute hæmostasis; immediate transfer

and accurate adjustment of the untraumatized detached omentum to the denuded area, to which it should be carefully moulded.

W. O.

DIAGNOSIS AND THERAPEUTICS

The fourth venereal disease — erosive and gangrenous balanitis.

Owen, R. G., and Martin, F. A.; J. Lab. and Clin. M., 1917, ii, 862.

There is a type of venereal sore due to symbiotic action of a vibrio (fusiform bacillus) and a spirochæte.

The lesion may be simply erosive in character, or show marked sloughing and gangrene.

These organisms are probably of oral origin, and are closely allied, if not identical, with the organisms of Vincent's angina.

Hydrogen peroxid acts as a specific in this type of venereal infection.

Cauterizing and strong antiseptics should not be used, as they tend to produce necrosis of tissue, thus favoring the further growth of these organisms.

The gangrenous types demand salvarsan or neosalvarsan; as well as local treatment.

As with Vincent's angina, these arsenicals produce prompt alleviation, although they have no beneficial action in chancroidal infections. However, in general, the local treatment is all that is necessary.

The value of the atropin test in the diagnosis of typhoid fever.

Mason, E. H.; Arch. Int. Med., 1918, xxi, 1.

This use of atropin was disclosed by Marris in 1916. The technic is as follows:

On a fasting stomach the pulse rate is taken for ten consecutive minutes, while the patient rests quietly in bed. If the rate per minute remains practically constant, this is accepted as the average mean rate. Then one-thirtieth grain of atropin sulphate is injected hypodermically into the upper arm, after which the patient continues to remain quietly in the same position. After twenty minutes have elapsed the pulse rate is taken again and the counting is continued until the maximum rate per minute has been reached and it has definitely started to fall to a lower level. The difference between this high level and the mean of the ten consecutive minutes before the injection is taken as the release.

Usually in normal persons the pulse-rate increases from twenty to forty beats per minute after one-thirtieth grain of atropin sulphate subcutaneously. The increase is more marked in the earlier years of adult life, while after fifty it is not so great. Marris found the "release" to be so constant that he declared that an increase

of only ten beats or less per minute was very suggestive that the patient was suffering from a typhoid or paratyphoid infection.

Three hundred and six atropin tests were performed on 109 patients, 63 typhoid patients or paratyphoid B patients, and 46 on nontyphoid patients. Eleven of the typhoid group cases failed to give the reaction.

The subjective symptoms after one-thirtieth grain of atropin sulphate hypodermically in the patients having typhoid fever were almost nil, and in no case that gave a positive release did we find any pupillary changes. In the nontyphoid group most of the patients had dilated pupils and dry mouths for a short time after the test. Otherwise no bad effects were noticed.

The reaction becomes positive at about the tenth and disappears at about the thirty-first day of disease.

In the nontyphoid group three cases gave a positive reaction. We offer no explanation of these findings.

In the diagnosis of fevers of the enteric group, we believe the test to be of great value, and in many cases undoubtedly precedes the Widal reaction.

As a means of diagnosing the syndrome termed vagotonia we would suggest the use of atropin in the above manner.

BOOK REVIEWS

Infection, Immunity and Specific Therapy, with special reference to Immunologic technic. John A. Kolmer, M.D., Dr. P.H., M.Sc., Assistant Professor of Experimental Pathology, University of Pennsylvania; Professor of Pathology and Bacteriology, Philadelphia Polyclinic; Pathologist to the Philadelphia Hospital for Contagious Diseases; Pathologist to the Department of Dermatologic Research. Pp. 978, with 147 original illustrations, 46 in colors. Second edition, thoroughly revised. \$7.00. W. B. Saunders Company, Philadelphia, 1917.

The brief period which has elapsed between the appearance of the first and second editions of this work testifies both to the rapid advances that are being made in immunology and to the deservedly cordial reception of Kolmer's book. The original volume was planned to give to practitioners and medical students a concise and sequential account of our present understanding of infection and resistance against infection; to present a practical application of our knowledge to diagnosis, prevention and treatment of the diseases; to present a guide to immunologic methods for the use of physicians and special workers in laboratories; to formulate a laboratory course in experimental infection and immunity for use the medical school.

The subject matter is presented in five sections: 1, General immunologic technic; 2, Principles of infection; 3, Principles of immunity and special immunologic technic; 4, Applied immunity in the prophylaxis, diagnosis and treatment of the diseases—Specific therapy; 5, Experimental infection and immunity. The chief additions that appear in this second edition are concerned with the following: Focal infection; the Schick toxin test for immunity to diphtheria; complement-fixation in tuberculosis and other bacterial infections; the standardizing of a quantitative Wassermann reaction; Lange's colloidal gold reaction; treatment with serum of convalescents and normal persons; blood transfusion. Amplifications include anaphylactic skin reactions; bacterial vaccin therapy, specific and non-specific, and chemotherapy.

The book is remarkably well-planned, well-balanced, and throughout gives internal evidence of having been written by an active worker in immunology. The primary purpose of furnishing a practical manual has necessitated rather brief discussion of theory and the reduction of detailed evidence on many highly interesting controversial questions, but no one could adequately present full discussion of both immunologic theory and practice in one volume. A very pleasing though unusual feature of this book, written by a man with a distinctly laboratory background, is the excellent judgment of the author in regard to clinical applications of immunology.

The literature citations are not exhaustive, but the principal references to work done on recently developed subjects are given. The style is lucid and concise; the illustrations are instructive as well as ornamental, and the press work is remarkably well done.

To state only that the book is thoroughly commendable as a text-book for medical students would be unfair. It should be studied by all general practitioners and by every specialist whose work is in any way concerned with infection. Never until now has there been a time when practitioners have relied so much upon the assistance of diagnostic and therapeutic methods concerning which they possess such meager comprehension. How frequently have we heard the learned and affluent practitioner use the terms serum and vaccin interchangeably, or have been given the impression that he understood the Wassermann reaction to be a sort of Widal test performed with the *Treponema pallidum*. In correcting these and other confused impressions, this volume should render valuable service.

S. B. H.

Medical Ophthalmology. Arnold Knapp. Pyle's "An International System of Ophthalmic Practice," 8vo. pp. 509, 32 illustrations, cloth, price \$4.00. Philadelphia, P. Blakiston's Son & Co.

The subject is treated under the fifteen following headings: Anatomy and Physiology; diseases of the nervous system; diseases of glands with internal secretion; poisons; infectious diseases; diseases of the circulation; diseases of the respiratory tract; diseases of the digestive tract; anæmia; diseases of the kidneys; diabetes; diseases of the female generative organs; osseous system; skin diseases; hereditary eye diseases.

The relation of the eye to general disease is such a large subject that the effort to group the essential facts in one volume is a most praiseworthy undertaking. Some idea of the amount of research involved is evidenced by the fact that 500 different authorities are quoted. Besides this, the author's extensive clinical experience and his recognized acumen have given to the work a breadth of view which is phenomenal. Every chapter is so replete with important information that it is difficult to select any one for special commendation. In a somewhat hurried reading for this review, the chapter on "Diseases of the Circulation" has been most helpful in clearing up the interpretation of the ophthalmoscopic picture in a recent case of arteriosclerosis. The author's idea of the importance of "Diseases of the Nervous System" is shown by his devoting to this subject 110 pages. A very comprehensive index will enable one to use the book as a ready reference. The practical value of the material to every ophthalmologist cannot be overstated.

D. W. W.

Potter's Compend of Materia Medica, Therapeutics and Prescription Writing, with Especial Reference to the Physiological Action of Drugs, by A. D. Bush, B.S., M.D., Professor of Physiology and Pharmacology, Medical Department, University of Southern California. Eighth Edition, Revised. Price \$1.25. Interleaved for taking notes, \$1.50 net. P. Blakiston's Son & Co., Philadelphia. 1917.

This little book of 274 pages is intended chiefly for medical students. Brevity of statement is one of the principal features of it; at the same time the essentials of the subject are always kept in view. It furnishes a concise *resume* of the relatively more important data about common official and some unofficial preparations, their administration and classification, and devotes several pages to instructions in prescription writing. The compend discusses 118 medicines, giving

for each its chief preparations, its physiologic actions, and therapeutic use. It classifies them into restoratives, agents promoting waste, alteratives, astringents, cerebral depressants, cerebral excitants, motor depressants, motor excitants, antizymotics, antipyretics, specifics, evacuants, and topical agents.

MOBILIZING THE PROFESSION FOR WAR

Until the entire medical profession of the United States, or at least those who are mentally and physically fit and within the age limit, are mobilized within the Medical Reserve Corps of the United States Army, not until then can we give to the Surgeon-General that efficiency which he so badly needs in having a large body of Medical Officers upon whom to draw.

You may never be called, at the same time, your joining the Medical Reserve Corps and placing your services at the command of your country, clearly indicates the patriotism which the medical profession, as a whole, should evince and which we must manifest if we are to win the war.

Every doctor must realize that success depends upon a carefully selected and thoroughly trained body of Medical Officers. By careful selection, we mean the placing of a medical officer in a position where he is best fitted for the service, and only by having an immense corps or the entire profession mobilized upon a war basis, can we serve our country to the best possible advantage.

This mobilization of the entire profession should come from within the body itself, but every physician coming within the requirements of the service, as to age and physical fitness, should seriously consider this suggestion and not wait for complete mobilization but apply at once for a commission in the Medical Reserve Corps of the United States Army.

It is not only for the combatant forces that medical officers are required, but for sanitation, hospital camps, cantonments and in other departments where the health and life of the forces are dependent upon the medical officer.

We have within the profession a sufficient number of doctors fully to meet the requirements of the Surgeon-General's Office, whatever they might be; but to be of service, you must join the Medical Reserve Corps to enable you to meet the appeal which is now being made for a large and efficient Medical Reserve Corps upon which the Surgeon-General may draw as requirements demand.

THE NEEDS OF THE MEDICAL SERVICE

Under the above caption, Lieut. Col. R. E. Noble, M.C., U.S.A., presented before the last meeting of the Southern Medical Association a most desirable paper, which convincingly answers the many questions asked of the Department, and which have caused perplexing hours of thought with many doctors.

The communication appears in full in the December issue of the Southern Medical Journal and should be read by every doctor in this country.

In a previous paper by the same writer, presented prior to the time that the United States entered the world struggle, as in the above referred to communication, Col. Noble said: "On the medical profession rests a heavy responsibility, for with the medical profession rests the subject of medical preparedness."

This is a particularly impressive paragraph and pregnant with truth, and its meaning should sink deep into the heart of every doctor in America. What was a fact before we entered the struggle is more than a fact now, since we have joined forces with our Allies in a world war, and which will only be terminated by the success of our arms.

We have not a sufficient number of medical officers to care for the combatant and other forces now in training. With the new draft soon to be called and the possibility of the raising of an army of between five and ten million, as has been authoritatively foreshadowed, we would repeat "On the medical profession rests a heavy responsibility, for with the medical profession rests the subject of medical preparedness."

The responsibility of the medical profession of the United States and its importance in the successful outcome of the war cannot be too forcibly impressed upon every doctor who is mentally and physically fit and within the age limit, and they are urged to offer their services now.

That the Surgeon-General should have an immense corps of Medical Reserve Officers upon which to draw, enabling him to place the individual where he will be best fitted for the service, is manifestly apparent. This will mean efficiency, and by efficiency alone can the responsibility now resting upon the medical profession of this country be lessened.

Apply at once for a commission in the Medical Reserve Corps and thus relieve the responsibility which you owe to your country, your profession and yourself.

LEAGUE FOR PREVENTIVE WORK

Venereal Diseases Declared Reportable. The Massachusetts plans in reference to the campaign against venereal diseases may be summarized under the following heads: 1. Policy of extending facilities for laboratory diagnosis. This involves particularly the facilities for Wassermann diagnosis. Wassermann laboratories are now maintained by the State Health Department and by the city health departments of Boston, Worcester and some of the other larger cities, and numerous hospitals. 2. Manufacture and distribution of free "arsphenamine." The State Department of Health was authorized two years ago by a special resolve of the Massachusetts legislature to carry out research and to manufacture and distribute free for the benefit of the people of the State, salvarsan or any satisfactory substitute therefor. A process has been perfected by which a product which has been named "arsphenamin" is now being produced for distribution. Tests carried out by the department of Pharmacology of Harvard University are extremely satisfactory. 3. Establishment of venereal clinics or centers. It is expected to have at least seven or eight such clinics established within the next two or three months. One great incentive to the establishment of such clinics by local communities is the fact that the State now can furnish "arsphenamin" free to such clinics. To stimulate the interest of local communities and to safeguard the distribution of "arsphenamin" this Department has asked from the State legislature an appropriation sufficient to make such clinics the official centers for distribution of "arsphenamin." 4. Reporting of venereal diseases. Gonorrhea and syphilis have been declared reportable by the State Department of Health, taking effect February 1st, 1918. 5. General education. The Department has ready for distribution a brief educational pamphlet in reference to venereal disease. Lecture service is also available.

By direction of the Commissioner of Health,

EUGENE R. KELLEY, *Director*,
Division of Communicable Diseases.
State House, Boston.

Scientific Accuracy applied to Child Work. At this time more than ever, every organization which has to do with child care ought to focus and intensify its energies toward developing high-grade citizenship. The Church Home Society, with a view to hitting the mark more surely, has established a department of Psychiatry. In specially equipped quarters the contact between child and psychiatrist is naturally and easily made. The department has been in operation two months, too short a time to permit report of results. The plan of the work, however, comprehends: First, a study of the problem cases, that is, those cases which are failing to adjust to present placement; second, study of all other cases under care as routine measure for advice as to vocational or educational betterment, and that records for every case may be on file; third, study of new cases admitted. Each child is considered in the light of his personal past history, his family history, his physical condition, and his mental status. Mental examination embraces determination of intelligence by standardized tests, special test for special abilities and disabilities, and psycho-analytic or other therapeutic procedure when psychopathic tendencies are discovered. Recommendation of procedure is definitely recorded; and through the visitor the spirit as well as the letter of our plan of treatment is transmitted to the foster mother. Perhaps the most important phase of the work is the possibility it will give to check up at a later day successes and failures and to correlate them with the recorded data.

ALBERTA S. B. GUIBORD, *Psychiatrist*,
The Church Home Society,
296 Boylston St., Boston.

HEALTH INSURANCE GAINS IN WAR TIME

"Health insurance in Great Britain is a recognized success," reports former Senator Everett Colby of New Jersey, upon his return from Europe after making a personal study of the practical operation of the British law under war conditions.

Meanwhile, the medical profession of Great Britain, as a result of five years' experience under the law, has now expressed its approval of universal health insurance. A comprehensive inquiry has been conducted by a committee of the British Medical Association among all local branches and panel committees. Its report on the favorable attitude of the doctors, published recently in the *British Medical Journal*, says: "The degree of unanimity so far disclosed is somewhat remarkable."

This indicates a significant change of view on the part of the medical profession as a whole, the Association finds, since at the outset health insurance "was the most controversial subject that has ever been before the profession." The investigation, according to the committee, has shown that the Act is today regarded as a distinct gain to the profession as well as to the public health.

In this country, the official legislative commission of New Jersey has recently reported unanimously in favor of health insurance legislation, saying: "The stress of industry in war is making increasing demands upon physical endurance. In our hour of necessity we have been shocked by the high percentage of draft rejections on account of physical disability. As never before we need now to conserve, for present and future generations, the health and physical vigor of our people."

A health insurance bill has just been introduced in the New York legislature, immediate passage of which is urged by the State Federation of Labor as a need accentuated by the war. This measure conforms generally to the plan presented last year, as prepared by the American Association for Labor Legislation in coöperation with the American Medical Association. It was then opposed in some details by organized labor, but in revised form has since been given its unanimous support, following careful study by the Federation's committee on health. The workers to be benefited have in this country passed through a period of uncertainty and even opposition, which finally has developed into support of health insurance, not unlike that which the British medical profession has undergone during the past five years.

The four specific demands of the American Medical Association that health insurance legislation "shall provide for freedom of choice of physician by the insured, payment of the physician in proportion to the amount of work done, the separation of the functions of medical official supervision from the function of daily care of the sick, and adequate representation of the medical profession on the appropriate administrative bodies," are all covered in the New York bill.

AN ATTEMPT TO PRODUCE IMMUNITY BY TRANSPLANTING TUBERCULOUS LYMPH NODES INTO NORMAL ANIMALS

Regional nodes infected from the point of inoculation were transplanted into normal guinea pigs. This acted in the same way as an ordinary inoculation with free bacilli, no increased capacity for resistance, no modification in virulence of the bacilli, and no development of the tuberculin reactions before the development of enlarged nodes in the groin of the host were observed. The ulcer over the first implanted node never heals while ulcers over subsequently implanted nodes ulcerate, discharge caseous pus and heal in a very short time. The lymph node method of inoculation does not appear to differ essentially from the method with free bacilli. The vicarious lesion does not function as a previous infection and confer the partial immunity which would lead to its own healing.

Autogenous replanting was also tried. A pig was infected by implanting a tuberculous node in the abdominal wall. Six weeks later the inguinal glands were removed, and one replaced under the skin. The incisions healed promptly and eight weeks after the second operation the pig was killed and the second planted node found to be surrounded by a dense fibrosis not observed in any other guinea pig up to that time. One of the remaining inguinal nodes was planted in a fresh pig. This pig developed inguinal node enlargement slowly (4½ weeks), ulceration occurred in about seven weeks and the ulcer remained

small and indolent. At necropsy four months later there was dense fibrosis around the planted node and general tuberculosis of the fibroid type different from the usual caseous process.

In the hope of giving the host the products of activity of living bacilli without exposure to infection, infected nodes coated with celloidin were implanted into a second pig. If the second pig was tuberculous and sensitive to tuberculin the operation was followed by a skin condition exactly corresponding to the tuberculin reaction, showing that there had been diffusion through the celloidin coating.—Webb, G. B., Ryder, C. T., and Gilbert, G. B.: An Attempt to Produce Immunity by Transplanting Tuberculous Lymph Nodes into Normal Animals, *Am. Rev. Tub.*, 1918, i, No. 11.

A COMPARISON OF PHYSICAL SIGNS, SYMPTOMS AND X-RAY EVIDENCE OBTAINED IN PULMONARY TUBERCULOSIS

The authors present a comparative analysis of the evidence obtained by different methods of examination in pulmonary tuberculosis. They review the varied pathology of the lung in tuberculosis and the probable associated changes of density of the different lesions as assumed to exist as a basis for the interpretation of x-ray plates. By means of the x-ray some idea is gained of the extent of the disease and the type of pathology underlying the physical signs, giving rise to the local and general disturbances of the system, thus bridging, in part, the gap which is left between the evidence derived from symptoms and physical signs respectively. The authors have been impressed with the frequency of cases with clinical evidence of pulmonary tuberculosis without signs in the x-ray plates of gross densities but with definite shadows of tubercles in the linear arrangement, concomitant with the pulmonary ramifications. They interpret this as a possible manifestation of a lymphatic pulmonary tuberculosis, and infection from the medium bronchi of the lymphatic tract or spaces of the tissues surrounding the medium bronchi and arteries. They call this the peribronchial or lymphatic type as contrasted with the parenchymatous or alveolar type. Dividing the latest series of 235 cases at the sanatorium into these two groups they have tabulated the percentage of occurrence of those symptoms, physical signs and laboratory findings which would in themselves indicate the probable existence of a pulmonary tuberculosis. They conclude from the analysis that there is a type of pulmonary tuberculosis showing x-ray shadows of peribronchial distribution which is otherwise characterized as follows:

1. By the less frequent occurrence of hæmoptysis.
2. By the infrequency of the occurrence (7 per cent.) of tubercle bacilli in the sputum.
3. By the limited occurrence (3 per cent.) of medium coarse rales.
4. By the less frequent occurrence of the positive complement fixation reaction.
5. By an apparently lessened skin sensitiveness to tuberculin.

It would seem probable that this type of lesion has no communication with a bronchial lumen — that absorption into the blood stream does not take place as freely as in the usual type.

Assuming a justification for the differentiation of the two types seen in the x-ray plates the authors make a further comparison with the usual classification of cases made by symptoms and physical signs. They find that roughly one-half of the incipient cases are of the patchy or parenchymatous type. Of the moderately advanced cases the greater number showed evidence of parenchymatous change. The latter is probably a more advanced or more unfavorable lesion or the expression of a different kind of infection either as to time or route of infection or both. The subdivision of incipient cases makes feasible a more accurate knowledge of the type of pathology and probably also of the clinical course.

The x-ray is also found in their analysis to be of great value in the diagnosis of early cases without definite physical signs and as a check upon the physical examination where the lesions give signs limited to dullness, changes in breathing and increased voice transmission.—Heise, F. H., and Sampson, H. L.: A Comparison of Physical Signs, Symptoms and x-ray Evidence Obtained in Pulmonary Tuberculosis, *Am. Rev. Tub.*, 1918, i, No. 11.

HELIO THERAPY IN TUBERCULOSIS

A quartz mercury lamp was used as a substitute for sunlight. Because of the cold climate it was impossible to expose the whole body, a procedure which would probably have yielded better results. Instead, the method of Bach was followed in which gradually increasing exposures are given on the back and chest only.

Of the thirty-one cases there were five among those receiving the full treatment that showed marked improvement that could be traced directly to the lamp, namely, disappearance of cough and expectoration, gain in weight, increased appetite and loss of fatigue. Five showed decrease of a previously prolonged cough and expectoration. Seven showed no changes of any kind. Four showed elevation of temperature after a few treatments and stopped them. One developed a temperature of 100° F. and a dry pleurisy. One expectorated a dram of blood. In one the psychic effect only seemed worth while as it could not be obtained by other means. One developed bacilli in the sputum and increase in pulmonary signs. All these untoward developments were easily accounted for by conditions and factors other than the heliotherapy. Three noted beneficial results in the interim between courses of exposure, namely decreased cough and expectoration, and gain in weight, strength and appetite. One mentioned that she felt better than for four years, having less cough, decreased nervousness, better strength and a gain in weight of 77 pounds, although she had previously had the greatest difficulty in gaining weight. Two had improved appetites and better digestion. The commonest complaints from the exposures were pharyngitis, probably due to the ozone, itching of the skin, and sleeplessness. If elevation of temperature occurred it averaged 99.2° F.

Improvement corresponded to pigmenting power. Brunettes improved more than blondes. Some blondes tanned under the lamp who had never done so in sunlight. If exposures are overdone burns will occur, or there will be repeated peeling of the skin without pigmentation. Reddening began about the third treatment and tanning about the seventh. During the longer exposures the pulse rose in some cases fifteen beats, but came down again the next day.

The results appear on the whole to be indifferent. The psychic effect seemed to be of great importance and might in itself make the treatment worth while. A few exceptional cases showed marked improvement directly due to the light exposures.

Mayer concludes that light therapy is certainly a valuable adjuvant, but must be used together with the usual routine treatment. In bone and joint tuberculosis, results have been most remarkable, with the closure of sinuses and both the healing of joint lesions and the reestablishment of function. Almost equal success has been met with in tuberculous disease of the skin, mouth, glands, pleura and peritoneum. Occasional disappearance of definite and marked disease of the ocular and genito-urinary apparatus has occurred. In laryngeal cases some few favorable results were obtained, especially by the direct application of light to the focus. Finally, in pulmonary tuberculosis, in a very few selected instances, definite favorable results were obtained that had to be considered as due to this therapeutic aid and which no other means of treatment alone was able to offer.

A review is given of the physical and physiological facts and theories involved, of the various methods of carrying out the treatment and of its effect in the various forms of tuberculosis.—Mayer E: Heliotherapy in Tuberculosis, *Am. Rev. Tub.*, 1918, i, No. 11.

THE LYMPHATIC SYSTEM AND TUBERCULOSIS

Because of its anatomical relationship the lymphatic system, draining every part of the digestive and respiratory tracts from which practically every tuberculous infection arises, is in itself almost invariably infected either in its vessels or glands. While there is therefore very commonly a deposition of tubercle bacilli in lymph glands there is as yet no good evidence to show that the lymphatic gland or the lymphocyte has a selective or specific antagonistic action on tubercle bacilli. Pigment granules are carried and deposited in the same manner, the difference between the bacilli and granules lying in the fact that the bacilli are alive, able to increase in numbers, and because of their destructive effect upon tissues to be further disseminated through the body. Lack of reactive tubercle forma-

tion to bacilli may be found in other tissues beside those of the lymphatic glands. Nor are arrest foci more frequent in lymphatic glands than in the lungs. Intestines, often literally bathed in tubercle bacilli, but remaining uninfected, liver and spleen which rarely show tubercle might be termed immune with equal justice. The only immunity known in tuberculosis, that is, the relative immunity to infection by the tubercle bacillus, is dependent upon a preëxistent focus of infection with the tubercle bacillus. Only such a focus and none of its component parts alone, or tuberculo-protein alone will produce this condition. From this point of view the work of Webb, briefly recorded in the same number of the *Review*, is of great significance and it is hoped that further refinements in his methods of lymph gland transplantations may shed light upon the baffling problem.—Editorial, A. K. K.: The Lymphatic System and Tuberculosis, *Am. Rev. Tub.*, 1918, i, No. 11.

CREPE PAPER BANDAGES FOR HOSPITAL USES

One of the most interesting examples of the needs of war time, forcing us to find substitutes, is the development of the crepe paper bandage. Heretofore gauze has been the only accepted material. The growing scarcity of gauze bandages, due to the abnormal use of them in the war hospitals of Europe, prompted the Dennison Manufacturing Co. to experiment with a bandage of creped white paper. Tests were made in the company clinic first and later when it was felt that the choice of paper and degree of creping was correct the bandages were handed over to surgeons in large city hospitals for their comments and criticism. The reply came back at once that this would be a boon at this time and they were then offered to the government and placed upon the local market. Many large drug jobbing houses have ordered and reordered and very recently the United States Government placed an order for a large quantity to be used in base hospitals over seas.

The bandages cannot be used as a substitute for gauze in every instance, but eminent physicians say that they will take the place of between 50 per cent. and 70 per cent. of the gauze wrappings. They are not for use in direct contact with wounds nor should they be substituted for gauze when a wet bandage is desired. For almost all other hospital cases, however, they do admirably and their chief function will undoubtedly be for the outside wrapping of wounds. Their tensile strength is most unusual. They are easily applied and removed and can be burned without odor or offensive smoke. They come in five sizes, ranging from 2 to 4 inches, and are 45 feet in length.—*From the Framingham (Mass.) Evening News of February 16, 1918.*

REHABILITATION AND OCCUPATIONAL THERAPY

The vocational and educational problems involved in the rehabilitation of disabled soldiers and sailors are analyzed and discussed by the Federal Board for Vocational Education in Senate Document 167, just published under the title "Rehabilitation of Disabled Soldiers and Sailors—Training of Teachers for Occupational Therapy."

Emphasis is placed on the immediate and pressing demand for the training of teachers of occupational therapy to take care of the handicapped men on their return from France. It is estimated that for every 1 000 000 men overseas, a minimum of 1200 teachers will be needed. What must be the qualifications of these teachers in view of the experience of the belligerent countries; how they may be trained; what problems are to be met; and how they are to be met in the course of vocational rehabilitation; the social and economic aspects of rehabilitation; and the need for a national system for the rehabilitation of the maimed and crippled in industry as well as in war, are the main topics of the bulletin. The document is written by Elizabeth G. Upham, under the direction of Charles H. Winslow, assistant director for research of the Federal board.

The emergency program outlined in the report is summarized as follows:

The returned disabled men are divided into four classes: 1, those who are permanently invalidated; 2, those who are able to work, but cannot engage in competitive occupations; 3, those who must learn new occupations in the light of their handicaps; 4, those who are able to return to their former occupations.

About 80 per cent. of all the disabled fall into the fourth group, and about 20 per cent. into the third group. The first two groups are relatively small.

For group 1 the treatment prescribed is "invalid occupations," which are occupations that help pass the time and save the patient from brooding. For group 2, those who will in all probability be unable to compete in any line of work, simple occupations are prescribed to be carried on under the guidance of occupational therapists. Such occupations as wicker furniture-making, chair-caning, toy-making and semi-trades, will be taught these men.

For the 20 per cent. who must learn new occupations a more elaborate course of rehabilitation is suggested. This will include simple occupations such as are taught to the men of the second group, followed by courses in general education wherever necessary, and followed in turn by prevocational education, that is to say, elementary vocational education; and, lastly, by vocational education in whatever line is best adapted to the qualifications and handicap of the man.

A similar curriculum is proposed for the 80 per cent. who will probably be able to return to their old occupations. Under the lead of the occupational therapist the patient will be gradually taught simple occupations, his general education will be "brushed up" and the deficiencies supplied, and he will be re-educated so as to resume his former trade in spite of his handicap.

The Federal board presents in this bulletin an outline of an emergency course covering eight weeks for the training of teachers to handle all four groups of disabled men. It is expected that a fraction of the disabled men themselves will serve as instructors. Nurses and teachers of arts and crafts will be available for the invalid occupation work; trained and selected women of education with previous experience in the arts, crafts and the "semi-trades" will be drawn on to teach simple occupations to group 2. In addition to these, there will be need in groups 3 and 4 of vocational teachers, preferably men, and men and women teachers, in general education subjects, instructors in manual training, commercial subjects, mechanical drawing, drafting, etc. Teachers of each group should have had practical experience in hospitals or institutions, and it is recommended that teachers in groups 3 and 4 should have experience in the same line of work in the military hospitals of Canada.

That every dollar invested by the Government in the vocational rehabilitation of disabled soldiers and sailors will bring handsome returns in national efficiency is maintained in the report. "If the war should finally end in economic exhaustion," says the report, "that Nation will ultimately triumph which is best able to use over again her men. It is claimed that Germany uses 85 to 90 per cent. of her disabled men back of the lines, and that the majority of the remaining 10 to 15 per cent. are entirely self-supporting. Belgium, whose depletion has been the greatest, was the first nation successfully to use over again her men. Not only has the large Belgium reeducation center of Port Villez been self-supporting, but in addition it has paid back to the Belgian Government the entire capital cost of installation. . . .

"Economic necessity has made possible the results achieved in Belgium. For the other nations not so hard pressed the rehabilitation of the disabled and the strengthening of the vitality of the civil population may be an important and perhaps a determining point in their economic future. . . . It is certain that our own economic future depends to a large extent upon the rehabilitation of those disabled both in war and industry."

The bulletin discusses at length the possibilities of development of occupational therapy and the equipment needed for all the groups described. Suggested blanks for keeping the records in the curative workshops and for hospital registration are included.

That 100 000 out of every 1 000 000 soldiers sent overseas will return to the United States during the first year of fighting, and that 20 000 of these will need some kind of vocational reeducation or rehabilitation, is the estimate made by the Federal Board for Vocational Education in a report just published as Senate Document 166.

"Long before the close of activities in the summer of 1918, the return of men will begin, and vocational reeducation must start with the first men sent back, and must be developed as the number of men in hand for training increases," declares the report. "The development of facilities for undertaking

vocational reeducation must, in fact, anticipate the return of the men, since adequate provision cannot be improvised after the men are actually in hand for training."

A comprehensive Federal system for the reeducation and placement in wage-earning occupations of every disabled soldier is presented by the Federal board. This plan involves a central administrative agency at Washington, the coordination with that agency or every Federal and State agency concerned and with similar public, semi-public and private agencies, the establishment of "curative workshops" for the treatment of war cripples, together with a complete system providing for subsistence and pay during the period of reeducation.

Basing its opinion on foreign experience, the report declares that "vocational rehabilitation cannot be regarded as costing the community, except temporarily, anything whatever. The disability of the soldier or sailor is an economic handicap reducing productive power. Unless the men are vocationally reestablished, and to the extent that they are not completely reestablished, the economic loss to the community will be cumulative during a long period of years. Even a slight increase in vocational capacity, as a result of vocational training initiated during the period of convalescence, will result in an economic gain which, also, will be cumulative over a long period. This aggregate cumulative gain will certainly exceed any expenditures for vocational rehabilitation."

The increase of the earning power of the handicapped man, thus rendering him economically independent, is the ultimate object of this program.

The plea is made that "all the experience and all the special equipment required for emergency war work will be needed to provide for similar work in the vocational rehabilitation of men disabled in factories and workshops, of the victims of accidents in all dangerous employments, and of the thousands of otherwise injured and crippled persons thrown upon the community each year. The number of such persons in normal times greatly exceeds the capacity thus far developed for their vocational rehabilitation."

In addition to the above, it discusses methods of financing, organizing and administering a national system of vocational rehabilitation; foreign experience and legislation are reviewed; and the proceedings of an inter-departmental conference held on the subject in Washington are summarized together with suggested legislation.

ABSTRACTS OF PAPERS READ BEFORE THE AMERICAN PROCTOLOGIC SOCIETY

Nineteenth Annual Meeting, New York June 4 and 5, 1917

THE PLACE OF THE PROCTOLOGIST IN A DIAGNOSTIC GROUP

ALFRED J. ZOBEL, M.D., F.A.C.S., San Francisco

Attention was again called to the fact that but few of the undergraduate medical schools give any adequate instructions in enteroproctology by qualified men. In sharp contrast to this, it is noted that in every postgraduate medical school in the country there is a department of rectal and colonic surgery, whose existence is amply justified not only by the number of patients which it treats, but by the large attendance of postgraduate students.

It is urged that the undergraduate medical schools, particularly those attached to universities, should take heed of the demands and needs of modern medicine, and that they should begin to realize that failure to impart instruction in enteroproctology, and in the other recognized specialties which have arisen in late years, impairs their standing as thorough teaching institutions.

Up to about twenty years ago all the medical needs of a community were attended to by the so-called family doctor. But year after year changes have been going on, until today is the day of the specialist. This era of specialism gives evidence of the advancement and betterment of the whole profession; it means far more efficient service rendered to the public than it has received in the past.

It now requires a close and almost undivided attention to that subject alone if one wishes to keep abreast with what is being accomplished in any special line of work.

With more knowledge and longer experience the specialist better realizes the close relationship existing between his particular field and all the other parts of the body. He further learns that while, from devoting his entire attention to his own special work, he excels therein, he consequently lacks knowledge, experience and adaptness in that of others. As a result, lately among progressive men there has arisen a movement to form what is known as "Diagnostic Groups." Group diagnosis is not a new idea. It has been used for years in the postgraduate schools, which are the only institutions possessing a staff of clinicians in every specialty of medicine and surgery. The present movement is simply an elaboration and an extension of the original idea.

Every diagnostic group should include specialists in every branch of medicine and surgery. In it should be an enteroproctologist with training and experience sufficient to warrant the interpretation of his findings being considered of some value.

The Fellows of the American Proctologic Society have repeatedly urged the necessity for coöperation with the internist, surgeon and other specialist. They have again and again pointed out that anal, rectal and colonic lesions often give rise reflexly to symptoms which may be wrongly attributed to disease in other parts of the body, and *vice versa*. This is especially true with regard to the reproductive and urinary organs of the male and female. Therefore, in the consideration of cases presenting symptoms in these parts, it is equally important to secure the opinions of the gynæcologist, urologist, and proctologist before a correct and final diagnosis can be deduced.

It is the high-class men among the various specialists of medicine and surgery who best know the value of, and mostly insist upon the need for, ano-recto-colonic examinations. They are the ones who best understand that through long and varied experience, skill in the use of the illuminated pneumatic sigmoidoscope, and ability to interpret correctly what is seen, the enteroproctologist is the one who should be relied upon to do this part in the diagnostic scheme.

The time has already arrived when even the laity recognize this, and they are now quick to take cognizance of the neglect of their medical adviser to secure for them an expert examination of the rectum and colon.

Every diagnostic group should include a competent proctologist. Only then will it be worthy of the name of "Diagnostic Group."

THE PRINCIPLES UNDERLYING THE CLAMP AND OPERATION FOR INTERNAL HÆMORRHOIDS

W. OAKLEY HERMANCÉ, M.D., Philadelphia

The author calls attention to the purpose of this form of operation.

First: To remove actual piles, or pathology.

Second: To support relaxed pile-bearing tissue and mucous membrane. After giving minute details as to his technic he insists that only just *enough* tissue be removed to care for the pathology, being sure that columns of mucosa and skin be left between the eschars, thus preventing any undue contraction of the rectal outlet. Unless the tissue included in the clamp is excessive it is not cut off but is destroyed by the careful application of the cautery.

Care is taken that multiple strips of wet gauze are placed under the clamp to prevent undue radiation of heat to the surrounding tissues. Careful placing of the clamp, thorough cooking of the included tissue combined with the crushing produced by the clamp, is depended upon to prevent such a complication as hæmorrhage. After all danger of secondary hæmorrhage has passed, the insertion of a gloved finger will overcome the tendency to contraction.

REPORT OF A CASE OF IDIOSYNCRASY TO QUININ AND UREA HYDROCHLORID

By COLLIER F. MARTIN, M.D., Philadelphia

Martin reports a case of toxic symptoms appearing in a patient from an injection of 3m. of a 10 per cent. solution of quinin and urea hydrochlorid. The symptoms complained of by the patient were swelling of the hands and feet, and numbness of the extremities. For a few hours there was some difficulty in respiration, associated with a tendency to fainting and some nervous perturbation. Later there developed an urticarial rash, covering the entire body, associated with intense itching. The attack subsided in about two days, leaving the patient with no alarming symptoms. The patient has had two previous experiences, and certainly should have informed her physician of her susceptibility. The case is cited simply to note one of the complications which may occur when using this drug.

RECENT DEATHS

Dr. Walter Barrows Hayward, aged forty-six years, died recently at the Massachusetts Homœopathic Hospital. He left his practice in Boston last October and went to New Haven to regain his health. Dr. Hayward graduated from the Cohasset grammar school, and the Taunton high school with the class of 1891. He entered Harvard University with the class of 1895 as a special student, studying there for a short time. He then transferred to the Boston University School of medicine where he obtained his degree.

Dr. Edward Pollock Anshutz. 1846-1918. Dr. Anshutz was long connected with Boericke and Tafel as literary editor and manager, and his work along medical lines resulted in the conferring upon him in 1909, by Hering Medical College of Chicago, the honorary degree of M.D. His place as editor of the *Homœopathic Recorder* will be taken by Dr. R. F. Rabe.

PERSONAL AND GENERAL ITEMS

Dr. John W. Harvey, B. U. S. M., 1917, resident physican at the Evans Memorial for Clinical Research and Preventive Medicine, has been commissioned First Lieutenant. M. R. C., and is to be attached to Base Hospital 44 (Massachusetts Homœopathic Hospital.)

Lieutenant Earl U. Hussey, B. U. S. M., 1917, has been transferred from Fort Oglethorpe to Fort MacPherson, Georgia.

Captain Orville R. Chadwell, B. U. S. M., 1903, has been ordered to Hoboken, New Jersey, for duty.

Dr. Noble H. Hill has moved from Garrison Hall to Hotel Hemenway; hours 3-4 and by appointment; Sundays by appointment only.

Dr. C. Wesley Sewall (B.U.S.M., 1914), 1st Lieut., M.R.C., has been ordered from Fort Oglethorpe to Hoboken.

Dr. Frank W. A. Mitchell (B.U.S.M., 1917), 1st Lieut., M.R.C., has been ordered from Fort Oglethorpe to Camp Meade, Annapolis Junction, Md.

Dr. Louis I. Skirball 1st Lieut., M.R.C., has been ordered from Camp McClellan to the Army Medical School.

Dr. Emil U. Dillenback (B.U.S.M., 1914), 1st Lieut., M.R.C., has received honorable discharge from the service and has been ordered home.

Dr. Joseph Segal (B.U.S.M., 1917), 1st Lieut., M.R.C., has received honorable discharge from the service.

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ORIGINAL COMMUNICATIONS

SYPHILIS AND THE WASSERMANN REACTION IN PREGNANCY AND THE PUERPERAL STATE*

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For a comparatively long period of years syphilis has been, in a more or less perfunctory way, the subject of discussion and practical attention by physicians at large. It has been, however, only in recent years, and more especially since the discovery and perfection of the Wassermann reaction, that the wider sphere of its relation to society as a whole has been recognized and the problem of its elimination has been somewhat systematically undertaken. State and local boards of health are seeking through the body of medical men at least to locate cases of the disease, and many are taking more advanced steps. Various organizations of social or similar character are now attacking the problem squarely and boldly because they recognize in the field at hand the future fruits of degeneracy, unless they grapple with the problem in the immediate present.

Surely no more direct way to the root of the evil exists than the recognition and treatment of the disease in the mothers of today, bearing the children who shall form the coming generation. This opportunity and this duty is the great one which confronts the physicians who come into immediate contact with obstetrical problems day by day. It will be endeavored in this paper to point out the various medical and serological aspects of this situation, present and future, embracing some more important phases of the disease as a whole, with direct reference to the value of the Wassermann reaction in its diagnosis.

*Read before the Alethean Club, January 1918.

It is a well-known fact that most of the cases of syphilis seen in pregnancy are unaware of the existence of the underlying disease until informed through the medium of the Wassermann reaction. Moreover, of these many give no evidence of syphilis, clinically, even when carefully observed and closely questioned. In fact, Gaucher has shown that in 33 per cent. of pregnant and in 37 per cent. of non-pregnant women with primary syphilis the initial lesion can not be determined. There are, therefore, a goodly number of reasons why these cases of pregnancy demand more than a casual examination. In addition to the general careful *ante partum* surveillance which any expectant mother has a right to expect, and which in time to come she will demand, it is of the utmost importance to determine, especially in the first pregnancy, the presence or absence of syphilis; all the more important because these patients are actual or potential mothers of families.

Syphilis, in the light of modern investigation, can not be considered a prominent cause of interruption of pregnancy prior to the sixth month; but syphilitic babies in their first ten days of life show a mortality four times as great as those with negative reaction. Moreover, such syphilitic mothers, in addition to being exceedingly prone to sepsis, by reason of their general debilitated condition, are frequently sufferers from psychic shocks attendant upon repeated miscarriages, still births, and invalid children. A still greater burden rests upon the child. Hochsinger finds, in a series of 516 luetic infants, 253 or 46 per cent. died *in utero* or during the first year of life. Of the remaining 263, 55 died before the age of four years; and of the remaining 208 only 51 remained healthy throughout their entire childhood. Syphilis still further takes its toll among children in mental defects, syphilitic keratitis, deafness, deformities of teeth and bones, criminality, and other conditions too numerous to mention. Dangers to the public through eating and drinking utensils, clothing, and direct contact with others, especially physicians and nurses, are at the present time scarcely appreciated at their full and fair value.

The transmission of syphilis from mother to child is generally accepted to be along the lines suggested by the so-called "maternal" theory. It certainly is not plausible that a syphilitic male element could infect an ovum, resulting thereby in an unhealthy luetic fertilization. Syphilis is transmitted to the offspring only by the placenta or by its predecessors the chorionic villi. Specific infection of the mother by the spirochætæ, and transmission of the same to the fœtus through the uterine sinus, is far more in line with modern scientific investigation. Fournier finds that when paternal syphilis alone is primarily

present only 37 per cent. of the offspring are infected. When both maternal and paternal specific infection are primarily present, the foetal mortality varies from 68 per cent. to 100 per cent. Bertha Sobrin also concludes, after a long course of investigation, that when the mother has syphilis at the time of conception or acquires it in the first five months of pregnancy, the child is almost certain to be syphilitic; in the sixth month foetal infection is probable; while, if disease develops after the sixth month, foetal infection is rare. Early and intensive treatment, therefore, give the baby a good foundation for its life; and conversely, repeated miscarriages and still-births are usually unnecessary and cast a reflection upon the skill of the attending physician. Treatment at the present time depends mainly upon salvarsan or neo-salvarsan, with mercury and potassium iodid in the later months, the former by inunction or intramuscular administration.

It may be truly said that in spite of some apparent unreliabilities of the test the Wassermann reaction has revolutionized syphilography. It furnishes a standard of judgment and of practical application of such other diagnostic means as may be needed in any given case. It is not a final criterion of diagnosis, by which all former standardized diagnostic methods may be thrown to the winds in its favor, any more than are the X-ray and other laboratory methods such criteria. It seems unfortunate indeed that the profession should be so stricken with hysteria worthy of the laity concerning a comparatively new and fairly constant test of so important a disease as to cause a prominent writer to publish an article entitled "The Fetish of the Wassermann Test." It is not the purpose nor within the ability of the writer to discuss the technic of the test or its modifications, nor the determining technical factors which may seem to account for apparent discrepancies in results, but rather to consider and endeavor to apply the findings therefrom, and to correlate them with clinical data, emphasizing it as a test of utmost value, but not a final determining factor to the exclusion of other clinical evidence. Nor, as Commiskey of the King's County Hospital, New York, strongly emphasizes, can one test be an evidence of unquestioned value, but rather is it but a link in the chain that leads to the diagnosis of syphilis. He finds that in a series of 1,822 mothers and 1,774 infants, at or within a month prior to delivery

145 mothers or 8 per cent. were positive,

26 mothers or 1.4 per cent were doubtful,

11 mothers or 6 per cent. were negative but had infants with positive or doubtful reactions.

Of the 145 positive cases only 26, or 18 per cent., gave symptoms or signs of syphilis. He does not state the nature of the antigens used, their degree of dilution, nor does he give the degree of intensity of the positive reactions. Of the 145 positive cases seen one to three months *post partum*, 115 remained positive; one former positive case was doubtful; six former doubtful cases were still doubtful; two former doubtful negative cases became doubtful, and one former negative case was positive.

A. M. Judd of New York found in a series of cases that primary cases of less than two weeks' duration are negative; of more than four weeks' duration positive in 75 per cent. of cases; that 90 per cent. of secondary cases with symptoms are positive; but that only 75 per cent. of the same type of cases without symptoms are positive; and that tertiary cases with or without symptoms show positive reactions in 75 per cent. of all tested. He also observes that lobar pneumonia frequently shows a positive Wassermann within a few days after the crisis; and that 20 per cent. of cases of malaria untreated and with pyrexia show a positive test. He makes no mention of *post partum* tests, however; and in fact, literature is very barren upon this phase of the subject. E. P. Davis calls attention also to the frequent occurrence of the positive phase of the Wassermann test in eclampsia and advanced toxemia of pregnancy. It may occur, also, he states, in cases where the general health may be otherwise seriously disturbed.

Of considerable interest in this connection and in contrast to literature on this subject (although the number of cases here mentioned are too few for any conclusions) are a few observations made at the Massachusetts Homœopathic Hospital, Robinson Memorial Department. The writer's attention was drawn to the occurrence of negative reactions three to twelve days *post partum* in all but one of nine cases who had shown one to three months *ante partum* three *plus* or four *plus* reactions. Going over the records of the other two services to October 1, 1916, the same change of reaction is noted in all but one of nine cases recorded, one other case positive *ante partum* not being tested *post partum*.

These observations with the others previously mentioned would seem to indicate that considerably more must be accomplished in the perfection of the Wassermann test in its application to pregnancy. Explanation of these variations have been numerous. The Wassermann test is fundamentally not a true antigen-antibody reaction. Probably the explanation lies in the well-known fact that all the ferments, especially the proteolytic ferments, are increased in both syphilis and pregnancy, and

that distinction at present may at times be difficult until more detailed work on the proteolytic ferments is accomplished.

In view of these facts, one naturally considers the question of the real importance of the Wassermann test in pregnancy, and also whether there may be at hand other practical means of diagnosis of syphilis; especially in the infant. Davis suggests that in the new-born the only truly reliable test is microscopic determination of the *spirochætæ pallidæ* in the blood from the umbilical vein and in the tissues about the cord. A Wassermann test of the blood from the umbilical vein is not only not conclusive but not even reliable. A microscopic examination is a comparatively simple procedure for the trained man and will decide many cases which might be in doubt clinically and serologically.

J. M. Slemmons suggests another method which, although not always practical, is nevertheless of decided interest. He teases with dilute hydrochloric acid fresh chorionic villi, which show distinctly different histologic structure in the normal and in the syphilitic states. The villi of a luetic chorion appear abnormally large, opaque, and of irregular shape with swollen ends. The pathology is a proliferative inflammation of the blood vessels. If these villi be suspicious, a hardened and stained section of placenta must be studied and a Wassermann reaction in the blood determined. All should be done, he claims, in premature, macerated, or still-born infants. In his series of 390 cases he notes that a positive Wassermann finds corresponding specific changes in the villi in 95 per cent. of cases. The Wassermann reaction is therefore a test of very great auxiliary value, although it must be considered in the light of clinical evidence; and if doubt still exists, further tests must be summoned into service. A persistent strongly positive reaction means practically always syphilis, while a negative test does not rule out infection nor does it always indicate a cure of the disease previously existent. It must truly be said, however, that in spite of its limitations, syphilography without a Wassermann test would today be as medical diagnosis without a stethoscope or sphygmomanometer.

One cannot bear upon the subject of hereditary syphilis without recalling the so-called laws of Colles and Profeta, which may be stated briefly that when a mother gives birth to a syphilitic child the mother may suckle that child without being herself infected with syphilis, but that the child may give the disease to another; and that, if a mother who manifests symptoms of syphilis gives birth to a child which shows no taint, such a child is immune and may suckle the mother with impunity. In the light of modern investigation it is evident that

these theories are no longer tenable. The immunity of the mother in Colles' law and of the child in Profeta's law is only apparent. Neither can contract the disease because each already has it in latent form, by reason of the presence of syphilitic antigens in the blood of the child and similar antigens in the blood and breast-milk of the mother. From a sociological as well as a medical standpoint this is an item of importance that can not be overestimated.

SUMMARY

1. Syphilis is today a tremendously vital subject, both sociologically and medically, and one of the chief points of attacks in the expectant mother.

2. Latent syphilis is far more prevalent than we have had reason to suppose.

3. The Wassermann reaction, in spite of some limitations, is a very vital factor in determining syphilis on a large scale.

4. Considerable research remains to be carried out for the perfection of the Wassermann test in order to clarify some apparent discrepancies which now exist.

5. The laws of Colles and Profeta are no longer tenable in the light of modern knowledge.

6. For the benefit of society as a whole, as well as the patients themselves, every possible step should be taken to determine the presence or absence of syphilis in the pregnant woman, especially in the case clinically suspicious, and in all cases of premature, macerated, or still-born children.

54 Huntley Road.

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TOXICITY OF SALVARSAN (ARSPHENAMIN) SUBSTITUTES

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The supply in this country of the original salvarsan and neo-salvarsan was exhausted soon after the beginning of the war. This shortage was temporarily relieved by a special shipment of accumulated stock from Holland and later by the arrival of a certain quantity of the drug on the merchant submarine *Deutschland*. There has been, however, no original salvarsan available for many months, at least not in the open market.

Substitutes began to make their appearance very early; among the first to be sold extensively in this country was a product labeled *diarsenol*, manufactured by the Synthetic Drug Company of Toronto, Canada. My early experience with this product was not particularly fortunate, many of the cases to whom it was given showing rather severe toxic reactions, both immediate and late. Flushing of face and rapid pulse, followed by pallor, very weak or imperceptible pulse, faintness or actual loss of consciousness with muscular twitchings, were among the symptoms developing immediately after or even during the drug infusion; the later attacks, occurring usually a few hours afterward, were chiefly gastro-intestinal: nausea, vomiting, abdominal pain, diarrhoea. Published reports showed that others had similar experiences. I discontinued using diarsenol because of this evidence of its toxicity, but later tried it again and have used it occasionally for several months with no or occasionally but slight disturbance. With neo-diarsenol, put upon the market later by the same firm as a substitute for neo-salvarsan, I have had no experience, but toxic effects have been reported.

The first salvarsan substitute made in the United States was produced at the Dermatological Research Laboratories in Philadelphia under an agreement with the American branch of Farbwerke-Hoechst Co., when the supply of salvarsan was used up. This product bears the name *arseno-benzol*. It was withdrawn from the market when salvarsan became again temporarily purchasable, but is now once more being sold. The technic of its preparation for infusion differs slightly from that used with salvarsan. I have found arseno-benzol very satisfactory, both as to results obtained and the minimum toxicity displayed by it.

Quite recently another American-made substitute was offered for sale. This is manufactured by Farbwerke-Hoechst Co. of New York, the distributing house of the original salvarsan. They claim that this product, for which the name salvarsan has

been retained, is manufactured in accordance with instructions received at the parent firm in Hoechst a.M., and that it is, therefore, identical with original salvarsan. A shipment of this drug received by me recently contained 0.4 g. ampuls, lot D J B, and 0.3 g. ampuls, lot B X B. The contents of several



- | | |
|-----------------------------|------------------|
| 1. Original salvarsan | 3. Arseno-benzol |
| 2. American-made salvarsan. | 4. Diarsenol |

of these ampuls caused most alarming immediate reactions: extreme pallor, perspiration, thready or imperceptible pulse; twice unconsciousness with muscular twitchings and tonic spasm; in one case involuntary urination; and in another case loss of memory and mild delirium lasting twenty-four hours.

The attacks usually began during the infusion and lasted but a few minutes. Late gastro-intestinal symptoms sometimes appeared, but these were mild and resembled those produced at times by other substitutes and by salvarsan itself. Subsequent infusions of arseno-benzol or diarsenol given to these patients had no unusual toxic effects.

Not all of the ampuls of this shipment caused such severe reactions; several of the infusions were followed by no symp-

toms at all and, furthermore, both toxic and non-toxic doses were found among both marked lots of the shipment.

My technic for preparing the drug for infusion was the same as that employed for other salvarsan preparations, namely, each dose was dissolved in about 50 cc boiled distilled water and then reprecipitated and redissolved by the addition of 15 per cent. NaOH. This concentrated solution was used for injection without further dilution. (Concentrated aqueous solutions were used also by Sargent¹ who has recently reported severe reactions following them.)

It must be stated that this technic differs from that prescribed by the manufacturers who advise dilution of the concentrated aqueous solution to 250 cc with 0.5 per cent. NaCl. In a circular recently sent out they state that all of the lots for which toxicity has been reported have been rechecked by them and that no unusual reactions were obtained if the drug was properly used. According to their statement, the sources of trouble may be the following:

Insufficient strength of sodium hydroxid solution; presence of sodium carbonate in this solution; stale distilled water. They advise the use of an indicator to determine that the solution is alkaline before injection and state that salvarsan is soluble in water at room temperature and must not be heated.

My technic may have been faulty in any or all of these points.

I have never considered it essential to have the sodium hydroxid exactly 15 per cent., because in any event this solution is toward the last added drop by drop, and a slightly weaker solution would merely require a few drops more than a strong one.

The sodium hydroxid sticks used for making my solution contained, according to the manufacturer's label, 0.134 per cent. sodium carbonate.

The distilled water was obtained from a Barnstead still that is partially filled at intervals of one or two weeks.

I have never used an indicator to determine that sufficient alkali had been added, but have depended upon the complete clarification of the salvarsan solution.

In most cases I dissolved the salvarsan approximately at 40 degrees, that is, at a little above body temperature.

Strict attention to the details prescribed by the manufacturers may prevent untoward results, but even if this is the case it must be assumed, in view of the virtual absence of disturbances following the use of other arsphenamin types (except early

¹ Sargent, J. C.: Toxicity of the American-made arsphenamin (salvarsan). Jour. Am. Med. Ass., 1918, lxx, 908.

lots of diarsenol) according to exactly the same technic that caused serious reactions with at least a portion of American-made salvarsan, that this product possesses somewhat greater toxicity.*

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DRUGS AND THE COVERINGS OF THE BODY

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In considering abnormal conditions of the body coverings we must not forget the powerful influence of the nervous system for both good and evil upon this enormous field. Further, we must not fail to recognize the fact that disturbances in these coverings are not due entirely to epithelial changes, but are frequently caused by involvement of the many and various kinds of glands whose ducts debouch upon the surface in question.

If we take these facts into consideration, we may be able to prescribe intelligently for skin and mucous membrane conditions, but not otherwise.

There may be some conditions in which change and degeneration of the epithelium alone seems to be in progress, but it is questionable if epithelial change occurs without involvement of some of the glandular structures with which it is so intimately blended, and even the underlying connective tissue may sometimes be involved.

This being the case we should observe care in the selection of remedial means for any given condition to be cured; and the curative pathologic possibilities of the drug, as well as its objective and subjective symptomatology, should be taken into account. We should also consider the interchangeable states which sometimes exist between the skin and mucous membrane, and select the drug in the light of metastatic possibilities of the condition to be cured.

Unfortunately, time and space forbid the exhaustive consideration which the importance of this subject demands, and consequently the very meagre details of drug indications that may be given within the limits of this paper must lead to the feeling that the jottings herein might properly be regarded as mere reminders for those who are well versed in our *materia medica*.

In considering these agents the natural inclination is to divide them into three groups: first, the drugs acting upon

*[A letter from the Hygienic Laboratory of the U. S. Public Health Service, requesting information concerning the toxicity of arsphenamin, is reprinted elsewhere in this issue.—ED.]

mucous membrane; second, those acting upon the skin; third, those having an affinity for both. Research, however, reveals the fact that while some drugs may influence only the mucous membrane, and some act upon both skin and mucous membrane, no drug confines its dynamic effects only to the skin. Drugs may, therefore, be grouped in accordance with their affinity for mucous membrane, and both skin and mucous membrane. An important factor which must not be ignored, no less in these than in other disease conditions, is the mental changes caused by the drug to be prescribed.

The following drugs are found to have more or less influence upon the coverings of the body, although the list is not exhaustive:—

Aconite, Aesculus hippocastanum, Allium cepa, Aloe, Antimonium crudum, Antimonium tartaricum, Apis, Arnica, Arsenicum album, Aurum metallicum, Baptisia, Belladonna, Calcareo carbonica, Calcareo fluorica, Cannabis sativa, Capsicum annuum, Causticum, Chamomilla, Cimicifuga, Cinchona, Clematis erecta, Coffea cruda, Colocynthis, Croton tiglium, Drosera rotundifolia, Dulcamara, Euphrasia, Ferrum phosphoricum, Gelsemium, Graphites, Hamamelis, Hydrastis, Ipecacuanha, Iris versicolor, Jatropha, Kali bichromicum, Kali hydriodicum, Kali muriaticum, Lachesis, Lobelia inflata, Lycopodium, Magnesia carbonica, Mercurius, Natrum muriaticum, Nitricum acidum, Nux vomica, Opium, Petroleum, Phosphorus, Phosphoricum acidum, Phytolacca, Plumbum, Podophyllum, Pulsatilla, Rhus toxicodendron, Rumex crispus, Secale, Sepia, Silicea, Squilla, Staphisagria, Stramonium, Sulphur, Tabacum, Thuja, Trillium, Urtica urens, Veratrum album, Yerba santa.

DRUGS AFFECTING MUCOUS MEMBRANE

Among the drugs having strong action upon the mucous membrane and weaker action, or none at all, upon the skin are the following:

Aesculus hippocastanum, with its sneezing, burning, stinging, raw sensation in the nose, and its accompanying dry throat and sensation of constriction.

Mentality: Dull, depressed, irritable, gloomy, unable to fix attention upon any subject.

Allium cepa acts strongly upon the eyes, nose and throat, the irritation extending through the Eustachian tube to the ear. The coryza is worse in the evening when the patient is confined in a room. Extending down into the larynx the irritation causes hoarseness, with hacking cough from inhaling cold air; and this cough seems to split the larynx.

Mentality: Indefinably anxious,

Aloe socotrina shows its affinity for mucous membranes in the production of nausea, distention of abdomen, with flatulence and constant urging to stool. There is a sensation of a plug wedged in between the symphysis pubis and the os coccyx. The patient must defecate immediately after eating and drinking; there is weakness and prostration at stool which consists of lumps of jelly-like mucus.

Mentality: Great disinclination to mental labor.

Bryonia alba affects the nasal membrane, causing congestion from which epistaxis results, especially on arising in the morning. The buccal mucous membrane is dry. Familiar bronchial and pulmonary symptoms are present. The gastric mucosa is congested, and there is excessive thirst; pressure in the stomach after eating, as from a stone; dryness of intestinal mucous membrane; and characteristic hard stools.

Mentality: Morose, ill-humored, apprehensive.

Calcarea fluorica is mentioned by Schuessler in "dry coryza" where there is offensive, thick, greenish, lumpy, yellow nasal catarrh. Bones of the nose may be involved.

Mentality: "Great depression; groundless fears of financial ruin; indecision; disposition to set a higher value on money than natural to him."

Cannabis sativa acts upon the mucous membrane of the urinary tract, but is also reputed to influence the nose, causing epistaxis; the trachea, causing raw sensation and hawking of tough mucus and also a hacking cough; and the stomach, causing "eructations of a bitter, sour, scraping fluid," and pain or pressure as from ulceration of the stomach. The urethra, however, bears the brunt of the attack, manifesting more or less swelling, soreness, and burning, biting pain running the length of the urethra while urinating and immediately thereafter; which combination of symptoms compel the patient to urinate "almost constantly."

Mentality: Action not pronounced. Cowperthwaite mentions "sadness."

Colocynthis very definitely causes colic, with distended, painful abdomen and clutching pains, better from bending double and from pressure. After eating there are bloody stools, with great discharge of flatus. When susceptibility to colocynth is lost, a cup of coffee will sometimes restore the normal sensibility of the patient.

Mentality: Disinclined to talk; morose, impatient, easily angered, and indignant at being disturbed.

Drosera rotundifolia acts strongly upon the respiratory tract and causes pertussis-like paroxysms of cough, with hoarseness

accompanied by rough scraping feeling in fauces. The mucus expectorated is yellow.

Mentality: Constant changing of subject of thought; depression.

Euphrasia exerts its influence upon the mucous membrane of the eyes and upper part of the respiratory tract, the eyes manifesting a stinging sensation with profuse lachrymation, redness of the margins of the lids with burning and swelling, and photophobia. There is much sneezing also with this lachrymation. Hoarseness may also be present, with profuse expectoration of mucus upon coughing.

Mentality: *Euphrasia* seems to have no characteristic mentality.

Hamamelis virginica, as is well known, acts strongly upon the venous circulatory system, producing congestion of the mucous membrane. From this results a feeling of tightness of the bridge of the nose, eventuating in profuse epistaxis which relieves the full feeling. Coryza also exists. There is dry feeling in the throat, momentarily relieved by drinking water; also soreness of the throat, causing pain from the effort to swallow. It is useful in hæmorrhoids with discharge of venous blood and great soreness of the anus; also in uterine hæmorrhage and in hæmoptysis.

Mentality: Inability to compose the mind to read or study; depression; crossness and irritability; weak memory.

Ipecacuanha, unlike *hamamelis*, has a strong affinity for the arterial capillaries. There is coryza with stoppage of the nose, accompanied by nausea; bright red epistaxis may follow. In bronchitis there is rattling of mucus, dyspnœa amounting to asthma because of involvement of the pneumogastric nerve. Nausea is a dominant symptom, especially in gastric disturbances, and it is here accompanied by flatulence, and followed by vomiting; these symptoms are worse from stooping. The irritation of the intestinal tract continues downward, resulting frequently in stools containing greenish mucus.

Jatropha curcas is but little used by the average practitioner, but it has a definite affinity for the intestinal tract. The picture presented by this drug is, "Vomiting of ropy albuminous matter, purging, coldness, nausea, and gurgling in the abdomen."

Mentality: There is nothing known in this field.

Nux vomica produces irritation of the mucous membrane of the respiratory tract beginning with the nares, causing profuse discharge of acrid mucus. There is watery discharge from the nose in cold weather, with sneezing, and irritation extending down into the throat, even to the larynx, causing hoarseness

with scraping and cough. The intestinal tract action is familiar, and the mentality also.

Opium inhabits the action of the muciparous follicles, and as a result there is dryness of the mucous membrane of the mouth and of the throat, and of the intestinal tract. There is violent thirst, distention of and violent griping and cutting in the abdomen, somewhat similar to that produced by colocynth; and constipation, with expulsion of hard, round, black fæcal balls.

Mentality: Anything from excitement to profound stupor.

Podophyllum peltatum is another drug without skin influence, but with the strong intestinal mucous membrane involvement with which all are familiar. The morning, gushing, profuse, offensive, hurrying diarrhœa, with preliminary borborygmus and pain, is characteristic.

Mentality: Nothing reliably characteristic.

Scilla maritima acts strongly upon the mucous membrane of the respiratory and digestive tracts, the nose and throat irritation resulting in fluent morning coryza, sneezing and watering of the eyes and tickling cough. The irritation extends down into the bronchial tubes, causing tickling cough, with stitches in the side of the chest, and dyspnœa. More or less mucus is expectorated, and the respiratory symptoms are worse during inspiration.

Mentality: Nothing definite.

Tabacum acts strongly upon the mucous membrane through its influence upon the pneumogastric nerve. Its characteristic deathly nausea, expectoration of rapidly accumulating tenacious mucus in the mouth and throat, and sinking sensation in pit of stomach are well known. "The secretions of the intestinal mucous membrane are increased, and the muscular layer is thrown into tetanic contraction, whence the catharsis which follows its administration" (Bartholow).

Mentality: Anxiety and difficult concentration of mind.

Trillium pendulum acts strongly on the mucous membrane of the uterus, causing bright red hæmorrhage, with sensation around the hips as if they were falling to pieces, ameliorated by a tight bandage.

Mentality: Nothing definite.

DRUGS AFFECTING THE SKIN

So far as our present knowledge of pharmacology is concerned, there is no evidence that a single drug has any action upon the skin alone, without at the same time producing some effect upon the mucous membrane at some point exclusive of local contact action.

The largest class of drugs affecting the body coverings are

found among those that act upon both skin and mucous membrane, the latter, however, in the majority of instances, bearing the brunt of the pathogenetic attack. Among these drugs are the following:

Aconitum with its familiar tendency to cause a "general conflagration." The skin is acutely inflamed, being red, hot, shining, and more or less swollen. In measles, scarlatina and even erysipelas this drug will not disappoint us.

The mucous membranes respond promptly to aconite, and we find this whole system of coverings in trouble, beginning with the conjunctiva, extending down through the whole respiratory tract, branching off into the ears by way of the Eustachian tubes, dropping down into both the gullet and respiratory tract, causing pain, stitching, burning, or cutting in the parts involved. In the chest it causes cough; and in the abdomen it produces dysenteric stools. Nor is the genito-urinary tract slighted, for here we find sufficient difficulty to give the patient much suffering at times.

Mentality: In this field the details are familiar; the timidity, fear of imagined dangers of dark places, and the positive "fear of approaching death," are as well known as is the great mental and physical restlessness.

Antimonium crudum and *tartaricum* both show strong affinity for the skin and mucous membrane. The former tends more to horny excrescences, the latter to pustulation. Upon the intestinal tract crude antimony acts strongly, interfering with digestion because of the great quantity of mucus secreted, undigested food being found in the stools as a result; tartar emetic, on the contrary, has a most positive action upon the respiratory tract, with which all are familiar.

Mentality: Crude antimony causes a characteristically fretful state of mind; the patient does not wish to be annoyed in any way. Tartar emetic causes restlessness, anxiety, apprehension, and bad humor.

Apis mellifica is universally thought of in erysipelas, urticaria, œdematous angina, and in annoying dysuria, with frequent but scanty micturition.

Mentality: Its absent-mindedness, irritability and jealousy should always be taken into consideration in prescribing this drug.

Arnica montana is another interesting drug. In both tissues we find it may produce ecchymoses, which may result in external hæmorrhage or, in the case of mucous membrane involvement, portions of this tissue may degenerate and be destroyed. The skin may be the site of erysipelatous lesions with involvement of the cellular tissue; or furunculosis with the char-

acteristic soreness may appear. This impartial destructive tendency of arnica led the once famous surgeon Grauvogl to prescribe it in all cases of wounds, whether from bullet, sabre, knife or musket butt, or as a post-operative remedy.

Arsenicum album is so well known that it is barely necessary to mention it. Its action upon both skin and mucous membrane is definite, positive, and characteristic; weakness, restlessness, burning and thirst are prominent in its pathogenesis.

Mentality: Its dread of death on the one hand, and its determination to commit suicide on the other, both point to this drug.

Actæa racemosa has particular proclivity for the nervous system and fibrous tissue, but the mucous membrane and the skin do not escape. Large doses will cause nausea and vomiting. There may be periodical colicky pains in the epigastrium, better from bending double, like those caused by colocynth. Tickling in the throat, with violent cough, is an indication for the drug, and in the intestinal tract a condition alternately of constipation and diarrhœa may exist. Very little is said of the skin symptoms of this drug, but the pathogenesis shows a dermal eruption on the hands and wrists which resembles mosquito bites.

Mentality: Depression; the patient is not disposed to fix attention on any subject.

Aurum metallicum not only acts on the nasal mucous membrane, but also upon the skin, where it forms deep ulcers. The mucous membrane involvement causes lachrymation, morning agglutination of the lids with burning, stitching, drawing, and itching, especially at the inner canthus. There is agglutination and painful ulceration of the nostrils, a feeling of soreness of the nose, especially when touched, putrid odor from the mouth, and painful swelling of the submaxillary and parotid glands.

Mentality: Despondency, disgust for life, and suicidal tendency are prominent; a physical and mental state such as may be found in some syphilitics.

Baptisia tinctoria is another drug affecting both dermis and mucosa, producing the dry mouth and tongue so frequent in fevers, abdominal soreness on pressure, fœtid, dark, mucous, and bloody stools, and also heat and burning sensation of the skin, with livid spots over the body due in some cases to sanguineous degeneration.

Mentality: Its restless mental condition, with the characteristic confusion of the mind in which the patient imagines he is scattered over the bed, leave no doubt as to the indication for this drug.

Belladonna scarcely needs more than mention as to its skin and mucous membrane influence, so well known is this great polychrest, and its mentality is equally familiar to us all.

Calcarea carbonica resembles that great, impartial polychrest sulphur, in that it affects the whole organism. Of course, neither of the body coverings escape, and we find the mucous membrane of the eyes, throat, Eustachian tubes, mouth, stomach, intestinal tract, urethra, larynx, trachea, bronchi, and skin, all more or less involved.

Tuberculosis is often the underlying cause of the localized difficulties indicating *calcarea carbonica*. In such cases there may be painless morning hoarseness, throat-tickling cough at night, with expectoration either salty or sweetish; chest pain on inspiration, with a sense of tightness and oppression. The skin tends to ulcerate; healing is difficult, especially in the case of small wounds; and moist, scurfy eruptions may occur. There may be chronic urticaria and warts in various parts of the body. I have seen many warts disappear after one dose of a high dilution of this drug.

Mentality: *Calcarea carbonica* causes disinclination for exertion of any kind, with apprehension of impending evil, which may even go so far as to give the patient a definite frightened feeling. "Anxiety" seems to be the orthodox way of expressing this mental influence of the drug.

Capsicum annuum might possibly be classed with the drugs having affinity for both mucous membrane and skin, but the latter action is due to actual contact of the agent and not to dynamic effect. The destructive tendency so strongly manifest in the mucous membrane, both of the intestinal and respiratory tracts, might be expected to extend to the skin, but the only physiological action upon this tissue must be regarded as the result of the drug's influence upon the capillaries through the nervous system rather than the direct action upon the cutaneous cells.

Mentality: Taciturnity, obstinacy, anger from slightest cause.

Causticum has its chief and most important sphere of action in laryngo-tracheal irritation, due to both nerve and mucous membrane involvement. Hoarseness, especially in the morning, is characteristic, together with a raw, scraped feeling in the trachea. The drug is further credited with an irritation of the skin, developing into itching with an eczematous tendency.

Mentality: Disinclination to work, depression, peevishness, weak memory.

Chamomilla is quite useful in skin difficulties. We all know the one flushed cheek; and there is also a red rash on both

cheeks and a tendency to ulceration of the skin, with burning, biting pain. Wounds suppurate easily.

The condition of the mucous membrane of the nose causes sneezing, stuffiness, a watery discharge, or a white discharge of the consistency of egg-albumen. The chopped spinach appearance of the stools intermixed with bright, yellow mucus, and the odor of sulphuretted hydrogen, indicate the drug, especially in teething children.

Mentality: The child is peevish, impossible to satisfy, and insists on being carried or rocked all the time.

Cinchona in its action upon the digestive tract has two rather peculiar symptoms, one is a feeling of satiety after eating very little, and the other is a desire to defecate immediately after putting the food into the stomach. The resulting diarrhoea is painless and exhausting. Because of the action of china upon the liver the skin assumes a yellow hue.

Mentality: The superabundance of ideas is quite characteristic. Ill humor may also be present.

Clematis erecta acts upon both mucous membrane and skin, and is indicated in conjunctivitis when there is smarting and rawness, with lachrymation, and a sensation of a veil before the eyes. The urethra manifests irritability which causes long-lasting contraction and interruption of flow of urine. There is also a burning sensation, worse at beginning of micturition, but no urethral discharge.

The skin shows moist, itching eczema, worse from washing in cold water, from warmth of room, and from wet poultices if they happen to be used for the eczema.

Mentality: Nothing definite.

Coffea cruda causes few, chiefly neurotic symptoms: The mucous membrane shows no disturbance, but the skin develops an eruption like that of measles, which itches, and the itching may change to a burning sensation.

Mentality: The mental symptoms are quite characteristic, the patient exhibiting the greatest mental activity, is quick to act, and very deft in action. Special senses are rendered more acute than normal, and there is sleeplessness because of mental activity.

Croton tiglium is another drug having an affinity for both coverings of the body. There is manifested a swashing in the intestines, as from water, and the evacuations are suddenly shot out, being of a dirty green, watery, offensive character. The skin shows itching vesiculation and sometimes pustulation. The drug is indicated in eczema.

Mentality: Nothing definite.

Dulcamara is characterized by definite action upon the skin,

indicated by "nettlerash over the whole body, with much itching; after scratching it burns; increases in warmth, better in cold." There may be in some cases a crust of a brownish yellow color over the body.

Colic may be caused by this drug, followed by diarrhoea, the discharge being watery and yellow. The respiratory tract is also involved, and there is congestion of the nasal membrane, aggravated in cold air, and sometimes epistaxis due to this congestion. The voice is rough and hoarse; there is more or less mucus in the chest, but the congestion is so great that blood sometimes colors the expectorated mucus.

Mentality: The patient is impatient and quarrelsome, though with this scolding disposition there is no anger.

Ferrum phosphoricum is a drug whose action is probably due to its influence upon metabolism and nutrition generally, rather than to what is usually considered its dynamic or physiological effect. Little is known of the pathogenic effects of the drug, and we must therefore depend almost entirely upon the observations of Schuessler for what is known of the therapeutic value of the phosphate of iron.

All febrile conditions in the early stage apparently call for this drug. This includes inflammation of the skin as well as of the respiratory, digestive, and urinary tracts. The mucous tissue is congested to such an extent that hæmorrhage therefrom is not uncommon. This condition includes conjunctivitis with redness and a sensation of soreness, as if grains of sand were under the lids. In the first stage of otitis, with pains and pulsation in the ear, tinnitus, and beefy redness of the tympanic membrane, this drug is also to be considered. Nasal congestion may cause epistaxis of bright red blood. The throat is dry, red and sore, the congestion sometimes extending into the Eustachian tubes; or it may spread downward through the larynx into the trachea and bronchi below, and such symptoms as are suggestive of this pathological state are present, including tickling, pain, and hæmorrhage. The first stage of cystitis may call for *ferrum phosphoricum*, the indications being frequent desire to urinate, pain, and throbbing. There may be also weakness of the sphincter vesicæ and incontinence.

In cutaneous hyperæmia of any kind, whether due to mechanical injury, furunculosis, erysipelas, simple dermatitis, acne, or the rash of morbilli, scarlatina, or variola, this drug should be studied.

Mentality: According to Schuessler the mental symptoms of *ferrum phosphoricum* are due to the general relaxation caused by the drug, resulting in loss of courage and hope; small obsta-

cles seem like mountains, and ordinary matters excite no interest.

Gelsemium sempervirens has a definite action upon the skin. In many instances the perspiratory function is stimulated; and its pathogenesis shows the production of an eruption on back and shoulders, but chiefly on the face. The rash is much the same color as that of measles, but less confluent and more papular in form. There is little or no attendant sensation.

Involvement of the mucous membrane is shown in the irritability of the conjunctiva, slight nasal catarrh, dryness of the throat, and accumulation of mucus in the upper part of the trachea, causing effort to get rid of it; also in the dryness of the mouth, yellow fur on the tongue, disagreeable taste, eructations of gas, nausea, pain in abdomen generally, yellow, "bilious" diarrhœa, and emission of flatus.

Mentality: The experimenter is low-spirited; incapable of mental application; feels stupid. Consciousness is retained even during complete motor paralysis.

Graphites acts characteristically upon the skin. In children excoriation occurs easily from slight friction. The corrosive, watery, sticky fluid which oozes from an eczematous skin is quite indicative. The eruption sometimes appears in the corners of the mouth, suggesting the tendency to spread to the mucous membrane. This really does happen, and "burning blisters" appear on the tip of the tongue. The throat is also involved, as is evidenced in the sensation of a lump in this region when swallowing. Frequent eructations, accompanied by a disgust for sweet things and an aversion to animal food, together with "constrictive, griping pain in the stomach," prove the involvement of the digestive function; and this action upon the digestive tract is further evidenced by the dark-colored, offensive stools, containing half-digested food, mucus, sometimes blood, and in some instances the stool is "lumpy, united by mucous threads." A sensation of sticking is present in the anus, or itching and smarting pain, all pointing to the fact that the drug runs its irritating course through the entire intestinal tract.

That the urinary tract responds to graphites is shown in the turbid urine which deposits a white or reddish sediment.

Women sometimes manifest a thin, white, mucous discharge from the vagina.

There are some symptomatic suggestions of respiratory tract involvement, but the foregoing fields of action are more characteristic of the influence of graphite upon the mucous membrane.

Mentality: This includes a despondent sadness, the patient continuously thinking of death; and this attitude doubtless is the

cause of the absent-mindedness of graphite patients, together with the lachrymose, apprehensive state of mind.

Hydrastis canadensis has more or less of a pathogenetic affinity for the skin, which may be expressed as an irritative action in various parts of this outer covering, and which has been characterized as intensely itching, erysipelatous, burning, and pimply.

The naso-pharyngeal action of hydrastis is well known, the discharge being of any degree of consistency from watery to pustulant, but a sense of rawness is characteristic. This irritation extends down through the throat into the bronchial system, and the rawness is always present.

The digestive mucosa is also involved, from the mouth to the anus, and we may find stomatitis, gastric catarrh with ulceration, catarrh of the duodenum, griping pains throughout the intestinal tract, and light-colored, acrid, and mucous discharges from the bowels. In some instances there is constipation, and this is frequently accompanied by hæmorrhoids.

Mentality: Nothing definite.

Iris versicolor has positive action upon both skin and mucous membrane. The eruption which yields to this drug is sometimes pustular in character, the scalp and face being the favorite seats of irritation. It may also be useful in herpes zoster, the right side apparently being the elected seat of trouble. It seems to be a fact that the skin involvement of iris is accompanied by gastric disturbance, which suggests the histologic similarity of the tissues affected, and also the possibility of metastasis from one to the other in case of local suppression.

Involvement of the intestinal tract begins with a feeling in the mouth and tongue as though they had been scalded; the salivary glands at the same time are stimulated to hyperactivity. There is nausea and vomiting of sour fluids; from the stomach the irritation extends down into the bowels, causing griping pains; soreness in hepatic region, probably from involvement of the liver; frequent watery stools, with burning and soreness in the anus.

Mentality: The patient is depressed and easily vexed.

Kali bichromicum has produced in provers a pustular eruption, and some experimenters recorded boils and pimples, the hands, arms and abdomen being the seats of involvement. Two experimenters report as follows: "The eruption began as vesicles on a red base, became pustular, and formed scabs under which were dry ulcers, presenting a hollowed appearance, healing in from one to four weeks, and leaving a depressed, white cicatrix." Clinically, the clear-cut punched-out appearance of the ulcer seems to be characteristic.

The drug acts strongly on the mucous surfaces also: the eyes show conjunctival injection with lachrymation, itching, and burning; there is nasal irritation with sneezing; and rhinitis degenerating into ulceration, especially of the septal mucous membrane. The whole nasal membrane becomes inflamed, a discharge of thick, yellow mucus supervening, which hardens into plugs. Epistaxis has also been caused by the drug, especially from the right nostril. The throat is sore; rawness and dysphagia are present. The mucus, which is expelled only after persistent "hawking," is tough and gluey, adhering to the mucous membrane. In the larynx there is a scraping sensation, with hoarseness, and a cough which raises the characteristic tough mucus.

The intestinal tract membrane evidences involvement by nausea and vomiting of brownish or light yellow matter, the nausea being aggravated by moving about, pains in the stomach, and soreness. There is distention of the stomach with burning sensation; also pain in the abdomen, frequently centering in the hepatic region, with borborygmus and distention. Diarrhœa supervenes, the stools being dark-colored and watery or pasty.

Mentality: The patient is ill-humored, despondent, gloomy, melancholy.

Kali iodatum has strong affinity for both skin and mucous membrane. It causes vesicular, papular, or pustular eruptions on the skin. Itching is generally better from scratching, and is worse at night.

The eyes, nose, mouth, throat, larynx, trachea, and bronchi may all be involved. Among the characteristic indications is an accumulation of tenacious mucus in the nostrils, which is yellow or greenish black, and of an offensive, sickening odor. This odor may also be detected in the mouth, and may come from the swollen gums or decayed teeth. The soft palate and tonsils are red and swollen, causing dysphagia. There is raw pain in the larynx as from granulations, and a deep hollow cough, with whitish and greenish expectoration, and tearing pain starting at the ensiform cartilage.

Mentality: Sadness and anxiety.

Kali muriaticum, according to Schuessler, acts very definitely upon both the skin and mucous membrane. This drug is used for various conditions, including acne, erythema, eczema, boils, abscesses, and erysipelas. Even in smallpox it is recommended as the chief remedy and is said to be especially useful in controlling the formation of the pustules. Bunions, chilblains, herpes, lupus, warts on the hands, dandruff, measles, and conditions of the skin arising from vaccination with impure lymph,

are all said to call for this agent. In fact kali muriaticum is a "wide angle" drug.

Its influence upon mucous membranes is also very diffuse. The conjunctival membrane discharges yellowish green matter. The Eustachian tubes may be affected, the membrane so inflamed and thickened that not only are cracking noises heard on blowing the nose but actual deafness may develop. There is thick, white mucous discharge from the nose. The vault of the pharynx may be covered with adherent crusts. The mouth develops white ulcers, excoriation and rawness. The tongue is covered with grayish white coating, or may be mapped. The pharynx is inflamed, and spots or pustules appear covered with gray or whitish exudate. The drug is therefore suggested in diphtheria. The gastric membrane is also involved, and in indigestion from fatty or rich food, with pain in the stomach and sometimes vomiting, kali muriaticum may be useful. Further down in the abdomen is swelling and tenderness, due possibly to a torpid liver; pale yellow evacuations, or constipation and furred tongue (gray or white) may also be present.

The laryngeal membrane is congested, causing hoarseness. Catarrhal asthma may appear during the second stage of bronchitis, the expectoration being thick and white. "The cough is short, acute and spasmodic, like whooping cough; expectoration is thick and white." The drug is further recommended as the principal remedy for the exudation in croup. In both pneumonia and bronchitis the tenacious mucus is difficult to cough up.

Mentality: Kali muriaticum has a very limited mental field. The one indication given by Schuessler is, "Patient imagines he must starve."

Kali sulphuricum acts powerfully upon both skin and mucus membrane, according to Schuessler. Dryness of the skin suggests its use; also "epithelial cancer, with discharge of thin, yellow, serous matter." This yellow or greenish yellow discharge is quite suggestive of the drug, whether occurring in the mucous membrane or skin. In eczema, erysipelas of the vesicular variety, ulceration with characteristic discharge, "diseased condition of the nails, old tetters," and even in smallpox, potassium sulphate is suggested, to say nothing of its curative influence in sudden suppression of any kind of rash, including measles, scarlatina, and eczema. The scalp is decidedly affected by the drug, and dandruff, falling of hair, baldness, and even a moist, sticky discharge, are reported as indicative of it.

As to its effect upon mucous membrane, we find it useful in conjunctivitis and ophthalmia neonatorum; also in nasal catarrh with the usual discharge, together with anosmia. The throat

seems to be skipped, but inflammation extends up the Eustachian tubes, causing swelling which extends into the middle ear, thus producing a greater or less amount of deafness. Ear-ache may develop, to be followed by the usual characteristic discharge, which may also be quite offensive. Extending down into the respiratory tract the disturbance produces coarse bronchial râles, with expectoration of the usual appearance of the discharges caused by this salt. The cough is worse in the evening and from heat. There may also be croupy hoarseness, whooping cough, or even in some instances pneumonia. Suffocative feeling in a hot room is quite characteristic. There is persistent desire for cold air. In many ways the drug resembles *pulsatilla* in its effects.

The digestive tract is also disturbed. The tongue is coated, yellow, and slimy. There may be burning in the stomach, thirst, nausea and vomiting, chronic gastric catarrh, and a sensation of a load and fulness in the stomach. Potassium sulphate is useful in certain forms of diarrhœa, particularly when the characteristic tongue is present, and it may be indicated for hæmorrhoids.

The genito-urinary tract also suffers: gonorrhœa with the characteristic discharge indicates the drug, and it may be of service in orchitis following suppressed gonorrhœa, and in leucorrhœa with the characteristic discharge.

Mentality: Fear of falling is given by Schuessler.

Magnesia carbonica causes "violent itching over the whole body." The intestinal tract responds to this drug most readily. In the mouth there is bitter or sour taste. There is violent thirst, desire for fruit and acid things, and also at times for meat; aversion to green food is also reported. In the stomach there is constrictive pain; the abdomen is distended, and there is profuse emission of flatus, which gives relief. Following griping, cutting, and rumbling in the abdomen, is a discharge of green stools, without tenesmus. The characteristic stools, familiar to all, are "green and frothy, like the scum of a frog pond."

Mentality: Nothing characteristic.

The *mercuries* also act strongly on both skin and mucous membrane, but so well known is this fact, and so voluminous are the symptoms of this group that space and time will permit merely this mention.

Mentality: These drugs are in the main characterized by sluggishness, weakness of memory, and miserable depression generally.

Natrum muriaticum is another agent wielding a marked influence over both coverings of the body. The skin shows lesions similar to urticaria, the whole body being more or less affected,

and the condition is aggravated by exercise. There may also be "tettery eruptions," oozing acrid fluid, or crusts with deep cracks.

Congestion of the margins of the eyelids occurs, and also of the conjunctiva. The nasal mucous membrane is congested and painful to touch, and the discharge may be either watery or thick. Because of a dry, congested state of the mucous membrane epistaxis may occur. Especially characteristic are the "painful burning pustules below the septum of the nose, afterward confluent and covered with a scab." This not infrequently appears in malarial intermittent fever. Rawness and burning may be felt in the throat, with the sensation of a plug. Traveling still further down the respiratory tract, the congestion will cause hoarseness in the morning, with accumulation of mucus in the larynx, and cough with bursting pain in the forehead. There may be dry cough, with expectoration of blood.

About the mouth there are blisters like pearls, especially in intermittent fever, similar to those appearing under the nostrils. Vesicles also appear in the mouth and on the tongue. Aversion to bread, anorexia, nausea, distention of the abdomen, cutting, griping pains, and in some cases painless, watery diarrhoea are recorded. The more frequent condition, however, is that of constipation, which is accompanied by a "sensation of contraction of the anus; difficult expulsion of hard, dry and crumbling stool, fissuring the anus, so that it bleeds and pains."

The urethra is also involved, and we find a discharge from the canal during and after micturition, causing itching and smarting.

In women leucorrhoea is present, the discharge being profuse, of a greenish color, and worse while walking.

Mentality: The patient is melancholy, depressed, lachrymose, and aggravated by consolation; she can not be comforted and prefers solitude. There is absence of mind and weak memory.

Nitric acid is another drug whose action is distributed over both skin and mucous membrane. The skin is dry, scaly and yellow. There are dark freckles; comedones; moist condylomata, hard, rhagadic, or with thin pedicles. Ulcers with irregular edges sometimes form, and they are the seat of splinter-like pains and exuberant granulations which bleed easily.

The various mucous membranes are impartially involved. Conjunctivitis appears, accompanied by biting, stitches, and lachrymation. The nose manifests coryza, with soreness and epistaxis, and may show ulceration, with splinter-like stitches, and soreness to touch. The same splinter-like pain is in the throat, with sore rawness as from ulceration and desire to hawk

up mucus. Extending into the Eustachian tubes the irritation causes here the characteristic stitches, and also cracking noises in the ears on chewing. The larynx manifests involvement by hoarseness, especially after talking. In the trachea there is scratching and stinging. A cough is present, which is worse at night or on lying down in the daytime, and results in the expectoration of purulent, yellowish mucus.

The digestive tract is involved from the mouth to the anus, the characteristic sticking and stinging pains being present in the areas affected. Blisters and ulcers appear on the tongue, with burning pains when touched. The inner surfaces of the cheeks and corners of the mouth are ulcerated, the usual splinter-like pains appearing. Because of the membrane degeneration there is foul odor from the mouth. The same condition extends down into the stomach, with resulting nausea, sticking pain, thirst, and vomiting of tenacious, purulent, and bloody mucus. The abdomen is distended with gas and is very tender. The spleen is involved, as is also the liver, the stitching pains being present here as elsewhere. Following this abdominal disturbance, there may be a constant, ineffectual desire for defecation, not relieved by stool; or there may be bloody, dysenteric stools, with tenesmus, or black, offensive stools, containing mucus or pseudomembrane, with straining and burning in the rectum. Fissures may also be present, and a sensation during stool as if the affected part were being torn.

The urethra is also involved, burning, smarting, and cutting sensations being present during micturition; here, too, the needle-like stitches are conspicuous. There may be a discharge of bloody mucus and pus.

Mentality: Irritable, especially in the morning; depressed and tearful.

A large number of additional drugs may be included among the disturbers of the peace of the coverings of the body, but time and space will permit merely the briefest mention of these agents. Among them may be noted one of the greatest of all the ophidians:

Lachesis, with its characteristic throat, cardiac, climacteric, and erysipelatous symptoms; its degenerative; exquisitely sensitive skin, and definite loquacious, subject-changing delirium.

Lycopodium causes characteristic intestinal disturbance, itching "liver spots," chronic urticaria, unhealthy skin, and corrosive vesicles.

Petroleum, according to Allen, is "very complex and not easily defined," though some of our materia medicists do not hesitate to give very definite symptoms.

Phosphorus is characterized in its effect by purpuric spots,

general itching of the skin, characteristic hoarseness and respiratory symptoms generally, regurgitations and bloody vomiting and longing for acids, and great mental sluggishness.

Phosphorous acid, with its formication of the whole body similar to that of phosphorous, its tinnitus aurium, its voluntary biting of the tongue, its unquenchable thirst, its involuntary diarrhœa which does not debilitate, and its mental quiet and incapacity for thought, is often useful.

Phytolacca may be indicated by sore ecchymotic spots. It causes characteristic dark, swollen tonsils with the sensation of a hot lump in the throat. There is indifference to life and complete shamelessness.

Plumbum gives rise to dry skin which may be bluish or jaundiced. There may be a distinct blue gingival line, constrictive dysphagia, anorexia, hiccough, nausea, *collica pictonum*, and slow perception of idea, apathy, and loss of memory.

Pulsatilla skin is itchy and has a tendency to eruption; mucous discharges are bland. There is peculiar indigestion, and an unmistakable, mild, sensitive, tearful, clinging disposition.

Rhus toxicodendron shows a very definite rash and skin condition generally. Its conjunctival involvement, its triangularly red-tipped tongue, its characteristic typhoid stools, and its restless, mild, flower-field delirium are important indications.

Rumex crispus causes itching of the skin, especially while undressing and on rising in the morning, and also a dry, incessant, fatiguing cough, due to tickling in the throat pit, and aggravated by pressure over the point of tickling, by talking, inhaling cold air, and by lying down.

Secale cornutum is characterized by a sensation of something creeping under the skin, by gangrenous blisters, epistaxis and hæmoptysis, by ravenous hunger and unquenchable thirst, and by great anxiety and fear of death.

Silicea gives rise to skin pustulations, difficultly healing wounds, and ulcers with sticking, stinging, burning pains somewhat similar to those caused by nitric acid. Swelling of the right lachrymal sac and gland, a sensation of a hair lying on the forepart of the tongue, excessive thirst, inactive rectum, purulent expectoration, excessive sensitiveness to slight noises, confused mind, and unnecessary conscientious compunctions are other symptoms of this drug.

Staphisagria symptoms include evening cuticular itching, burning after scratching, herpes, chronic miliary eruption, itching of margins of eyelids, swollen ulcerated spongy gums which bleed when touched, burning in the urethra during micturition, and itching, night cough, and peevish, indignant attitude, especially in the morning.

Stramonium is characterized by its intense, bright, scarlet-red rash over the whole body, its injected conjunctivæ, its dribbling of glairy saliva from the mouth, its spasmodic dysphagia and throat dryness, its violent thirst, its croaking voice, and its furious delirium.

Sulphur causes voluptuous itching and tingling of the skin, with burning and soreness after scratching, and a multitude of symptoms of the mucous membrane of the eyes, nose, mouth, throat, stomach, abdomen, intestinal tract, respiratory tract, and urinary tract. Among its mental symptoms are melancholy, despondency, lachrymosity, peevishness, quarrelsomeness, and anxiety.

Trillium exerts a strong action upon the uterine mucous membrane, causing bright red hæmorrhage, with sensation around the hips as if they were falling to pieces, which is ameliorated by a tight bandage.

Yerba santa, the holy herb, *Eriodictyon glutinosum*, with its decided influence upon the respiratory tract, needs further proving. Very little information concerning its pathogenicity is extant. It is sold in combination with malt, and certainly has a controlling influence over obstinate bronchial coughs which sometimes remain after an attack of *la grippe*. The only indication, so far as my personal observation goes, is a hard, dry, harassing cough, which is worse at night. Nothing is known of the mentality of this drug.

SUMMARY

These are some of the most important drugs used for the relief of symptoms of the coverings of the body. In conclusion a very brief summary is submitted which may be regarded as the foundation of a repertory.

In it the mucous membrane and the skin are the only parts to which attention is called. It is necessary to remember, however, that but rarely is only one tissue affected in the various ills to which flesh is heir, and that a special study of localized effects of a drug should always be regarded as merely an entering wedge to the solution of the whole pathological problem. If the reader will bear these facts in mind, I may safely submit the following pointers.

EYES

Aconite, *Allium cepa*, *Apis mellifica*, *Aurum metallicum*, *Belladonna*, *Calcarea carbonica*, *Calcarea fluorica*, *Clematis erecta*, *Euphrasia*, *Ferrum phosphoricum*, *Gelsemium*, *Kali iodatum*, *Kali muriaticum*, *Kali sulphuricum*, *Natrum muriaticum*, *Nitricum*

acidum, Pulsatilla, Rhus toxicodendron, Squilla, Staphisagria, Sulphur, Tartar emetic, Thuja, Veratrum album.

NOSE

Aconite, Aesculus hippocastanum, Allium cepa, Aurum metallicum, Bryonia alba, Calcarea carbonica, Calcarea fluorica, Chamomilla, Dulcamara, Euphrasia, Ferrum phosphoricum, Gelsemium, Hydrastis, Ipecacuanha, Kali bichromicum, Kali muriaticum, Kali sulphuricum, Mercurius, Natrum muriaticum, Nitricum acidum, Nux vomica, Pulsatilla, Squilla, Sulphur, Thuja.

THROAT

Aconite, Actea racemosa, Aesculus hippocastanum, Allium cepa, Belladonna, Ferrum phosphoricum, Hamamelis, Hydrastis, Kali bichromicum, Kali iodatum, Kali muriaticum, Lachesis, Lycopodium, Mercurius, Natrum muriaticum, Nitricum acidum, Squilla, Sulphur, Thuja, Veratrum album.

EUSTACHIAN TUBES

Allium cepa, Calcarea carbonica, Ferrum phosphoricum, Kali muriaticum, Kali sulphuricum, Mercurius, Nitricum acidum.

LARYNX

Aconite, Allium cepa, Belladonna, Calcarea carbonica, Causticum, Drosera, Dulcamara, Euphrasia, Ferrum phosphoricum, Hydrastis, Kali iodatum, Mercurius, Natrum muriaticum, Nitricum acidum, Nux vomica, Phosphorus, Sulphur.

TRACHEA, BRONCHI AND LUNGS

Aconite, Antimonium tartaricum, Belladonna, Calcarea carbonica, Causticum, Drosera, Dulcamara, Ferrum phosphoricum, Gelsemium, Hamamelis, Hydrastis, Ipecacuanha, Kali iodatum, Kali muriaticum, Nitricum acidum, Phosphorus, Pulsatilla, Squilla, Sulphur, Yerba santa.

GENITO-URINARY TRACT

Aconite, Belladonna, Cannabis sativa, Capsicum annuum, Clematis erecta, Dulcamara, Ferrum phosphoricum, Graphites, Hamamelis, Hydrastis, Kali muriaticum, Natrum muriaticum, Nitricum acidum, Pulsatilla, Staphisagria, Sulphur, Thuja, Trillium.

STOMACH

Aconite, Apis, Arnica, Antimonium crudum, Antimonium tartaricum, Belladonna, Bryonia alba, Calcarea carbonica, Capsicum annuum, Chamomilla, Cinchona, Colocynthis, Graphites, Hy-

drastis, Ipecacuanha, Iris versicolor, Jatropha, Kali bichromicum, Kali muriaticum, Magnesia carbonica, Mercurius, Nitricum acidum, Phosphorus, Pulsatilla, Phosphoricum acidum, Rhus toxicodendron, Sulphur, Veratrum album.

COLON, RECTUM AND ANUS

Aconite, Aloe, Colocynthis, Graphites, Hamamelis, Hydrastis, Iris versicolor, Kali sulphuricum, Mercurius, Natrum muriaticum, Nitricum acidum, Nux vomica, Podophyllum, Staphisagria, Sulphur, Thuja, Trillium.

RUPTURE OF THE LUNG

H. F. GAMMONS, M.D., Carlsbad, Texas

Rupture of the lung or spontaneous pneumothorax, as it is technically known, is a condition that is relatively infrequent in peace times, although it is quite probable that in war times, as a result of bullet wounds and bayonet stabs, ruptured lungs are frequent.

Rupture of the lung as a complication of pulmonary tuberculosis is more frequent than when there is no disease of the lung. I have met this complication six times in the last nine years, in approximately six thousand cases of pulmonary tuberculosis studied and treated from one to twelve months. It is possible that a number of ruptures were overlooked when the rupture was partial, especially in far advanced cases.

Spontaneous pneumothorax may be classified as *complete*, when there are no pleural adhesions and when the pleural cavity is entirely filled with air, or *partial*, when there are adhesions of the parietal and visceral pleuræ, limiting the escape of air to a pocket. We may further consider the rupture as *open, closed, or valvular*.

The symptoms, as well as prognosis and treatment, depend on the type of rupture and upon its location, that is, whether it is on the right or left side. Displacement of the heart may be an important factor and, naturally, left-sided ruptures are more to be feared, especially when they are valvular and complete.

Three of my cases were left-sided and three were right-sided ruptures. One right-sided rupture was partial and valvular and the other five cases were complete; one right-sided rupture and two left-sided ruptures were valvular.

The rupture usually came on following a severe coughing attack with symptoms as follows: severe pain in the affected side; marked nervousness; dyspnoea and some cyanosis; vomiting, in left-sided cases especially, and elevation of temperature with weak, thready

pulse. Expectoration abruptly stops in these cases when the other lung is not ulcerated.

Examination showed marked tympany over the affected sides in complete ruptures, and localized tympany in partial cases.

Displacement of the heart is extreme in left-sided ruptures. In three of my cases it was not possible to determine with any degree of accuracy where the heart lay, without x-ray examination.

Formerly no method of treatment was considered of any benefit, but with the use of an artificial pneumothorax apparatus we have been able to withdraw the air in the recent cases with most satisfactory results.

I have used the method recently described¹ and have attached the tubing to the inlet tube of the elevated bottle which contains the water that will by its own gravity displace the air in the other bottle, thereby causing suction with very little pressure exerted on the lung. It is best to take out as much air as the apparatus will hold without a second pumping, and we should be guided more by the feeling of the patient than by the manometric oscillations. The improvement in breathing and in the color is most remarkable following the removal of air.

Three of the cases which I treated a few years ago did not have the air removed; two of them died from pressure and one from empyema. The three cases in which I removed the air are doing well, although one has recently had a rib resection for empyema and one has developed an effusion which may eventually become purulent.

It is necessary in these cases to apply suction, as simple puncturing of the pleural cavity will not remove the air.

¹ Gammons: *Improved method for refilling in artificial pneumothorax* J. Am. M. Ass., 1918, lxx, 843.

PNEUMOTHORAX TREATMENT OF PULMONARY TUBERCULOSIS

H. F. GAMMONS, M.D., Carlsbad, Texas

The treatment of pulmonary tuberculosis by lung collapse was first undertaken in a very crude and superficial way about the year 1826 in England. Since then, sporadically, there have been reports of a few cases. Forlannini is considered the foremost observer to go into this work in detail, and in 1898 the late Murphy independently recommended the use of collapse in the treatment of pulmonary tuberculosis. Since 1898 the pneumothorax treatment, like the tuberculin treatment, has had many eras.

At the present time, pneumothorax treatment of tuberculosis is on a firm basis and is generally conceded by those who have used it extensively to be one of the most helpful methods of treating pulmonary tuberculosis that we have today.

The original apparatus was rather crude, but with the improved apparatus, especially the manometer, we can apply this treatment more scientifically. I have used the Floyd Robinson apparatus, using atmospheric air disinfected by passage through bichlorid of mercury; and for the initial puncture I have used the Floyd Robinson needle. The refills have as a rule been with a Shortle refill needle. A short time ago I devised a new method of refilling, recently described elsewhere,¹ consisting of the use of a long hypodermic needle through which the local anæsthetic and also the air are passed. This necessitates only one entrance into the pleural cavity, whereas formerly it was necessary to anæsthetize the interpleural space, then use the cataract knife, and finally insert the needle for the passage of the air.

The choice of site depends on the part we wish to compress; if the part to be compressed is at the base, we usually go in at the apex, and *vice versa*. I have used percussion and auscultation to determine which inter-space to use, almost always getting a free pleural space without adhesions where normal vesicular breathing and resonance were present.

As to the selection of cases for pneumothorax treatment, observers differ widely, some being very conservative and others applying the method in a large percentage of their cases. Bilateral infection was formerly thought to be a contra-indication. My experience has been that if the bilateral cases are properly selected and carefully observed we can get wonderful results.²

¹ Gammons, H. F.: *Improved method for refilling in artificial pneumothorax*. Jour. Am. Med. Ass., 1918, lxx, 843.

² Gammons, H. F.: Jour. Am. Med. Ass., March 19, 1918.

In a recent paper¹ I have shown that excellent results are obtainable in hæmorrhagic cases, and since writing that paper I have had a number of cases which confirm my previous reports.

I have collapsed or treated seventy cases, entering the chest 900 times without any bad effect that could be directly attributed to the treatment. There was one case of pleural shock, with recovery; there was no embolus formation; only one case developed tuberculous empyema. I have seen a few cases of pleurisy, dry and moist, but not the percentage that Riviere² has noticed. A number of the cases are still under treatment, some are quiescent, many are greatly improved, and very few are worse than they were previous to the treatment. Many were advanced cases, and the temporary improvement that they made was wonderful; after a sufficient collapse I am sure there will be a number of arrested cases among these advanced cases.

My conclusions regarding this treatment are as follows:

1. Every case of pulmonary tuberculosis should be seen at intervals by a specialist with the possibility of pneumothorax treatment in mind.
2. Pneumothorax treatments should only be administered by, or under direction of, an experienced chest physician.
3. Hæmorrhage, if persistent, should be treated by pneumothorax.
4. Patients treated by pneumothorax should be preferably in a good sanatorium under the strictest supervision and in bed continually, especially if of the bilateral type.

¹ Gammons, H. F.: *Artificial pneumothorax*, Boston M. and S. J., Jan. 17, 1918.

² Riviere: *Pneumothorax treatment of pulmonary tuberculosis*. Oxford University Press.

EDITORIAL

BOOKS for review, exchanges and contributions — the latter to be contributed to the *GAZETTE* only and preferably to be typewritten — subscriptions and all communications relating to advertising and other business should be sent to THE NEW ENGLAND MEDICAL GAZETTE, 80 East Concord Street, Boston. Make checks payable to THE NEW ENGLAND MEDICAL GAZETTE.

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MEMBERS OF GAZETTE STAFF IN ARMY SERVICE

Five of the seven members of the editorial staff of the *Gazette* are in military service: Editor Sanford B. Hooker and Associate Editor David L. Belding are with Base hospital 44 (Massachusetts Homoeopathic Hospital), which was mobilized at Camp Dix and is awaiting sailing orders; Associate Editor Conrad Wesselhoeft has been in France since last November, serving as regimental surgeon with 101st Ammunition Train; Associate Editor Harold L. Babcock is attached to the aviation Examining Unit at the Massachusetts Charitable Eye and Ear Infirmary, Boston; Associate Editor Winfred Overholser is stationed at Camp Upton, Long Island, to examine draftees for nervous and mental disorders.

Although this depletion of our force concentrates the burden of editorial duties and responsibilities to an almost uncomfortable degree, yet we are determined to maintain the recently instituted effort and policy to place the *Gazette* upon a strictly utilitarian basis.

EPIDEMIC CEREBROSPINAL MENINGITIS

The increased prevalence of meningitis, due largely to the assembling of large groups of men and placing them in intimate contact in army and navy camps and cantonments, has led to intensive investigation, both clinical and laboratory. The recent advances made in our knowledge of meningitis have led to the publication by the H. K. Mulford Company of a bulletin on "The Diagnosis and Treatment of Cerebrospinal Fever with

Antimeningitis Serum and Accessories." This brochure of twenty-four pages contains a very comprehensive presentation of the essentials of bacteriologic diagnosis, cultural identification of meningococci, carrier problem, serum treatment, and prophylactic immunization.

The technic, purposes, and value of lumbar puncture are adequately described, and particular attention is given to the determination of the type of meningococcus. The earlier researches of Dopter, Wollstein, Olmstead and others, on differentiation of strains of meningococci, have received confirmation and extension through the work of Gordon, Flack, and their associates, under the direction of the British Medical Research Committee. The latter observers have demonstrated, by cross agglutination, four more or less distinct serological types of meningococci and that an antiserum for any one, two or three of these types is not therapeutically potent against the others. Type determination is not yet as easy as in the case of the pneumococci and, therefore, for practical purposes, it is necessary that all typical strains shall be included among the cultures used for immunizing horses for the production of antimeningitis serum.

The standardization of antibacterial sera has always been a very difficult problem. In the case of antimeningitis serum, standardization has been attempted by means of agglutinin titration, by complement fixation titration, and by estimation of the tropin content of the serum. The latter has been especially unsatisfactory. The determination of the potency of the serum prepared at the Rockefeller Institute is by means of agglutinin measurement; at the New York State Department of Health by measurement of complement fixing bodies; and at each of these laboratories the polyvalent sera are tested with the various typic strains, in order to be sure that the potency of the serum is well balanced. Hitchens and Robinson, working on the standardization of antimeningitis serum in the Mulford Laboratories, question the value of the agglutinin test as a criterion of therapeutic potency of a serum; they make the point that a serum of strong agglutinin titer may be obtained by treating a horse after only a few weeks, but that protective antibodies require as many months for their formation. An animal protection test is considered *a priori* to be the most reliable method of standardization, and in the Mulford Laboratories has been developed a technic whereby white mice can be infected regularly with meningococci and the protective influence of antiserum determined. "To be of the proper potency, one mil of serum must protect against at least forty fatal doses of the test coccus." The reliability of this technic is, perhaps, not yet

determined beyond question and has not, so far as we know, been confirmed in other laboratories. Certainly, however, it is a step in the right direction.

In this bulletin is reviewed the rather meager literature on prophylactic vaccination against cerebrospinal meningitis, and a summary of the evidence indicates that there is probably at least a partial protection following the injection of meningococci. "It is very likely that only a moderate degree of immunity will give very considerable or complete protection against epidemic meningitis, which is caused by an organism of low virulence, infecting only a very small percentage of those who are exposed and harbor the organism temporarily in their noses and throats." The three doses recommended to be given at intervals of from five to ten days are, first, 500 million; second, one billion, and third, one billion.

Homœopathic Prescribing in Our Homœopathic Base Hospitals and Units.—It would be interesting at this time to know how far homœopathy is applied in our several base hospitals and units. We have been assured and we have excellent reasons for our belief that no discrimination against homœopathy or its therapeutics has been indulged in by the surgeon general or by other officers in authority.

We realize of course, that the individual homœopathic physician who has entered the army medical service has no choice in the matter of prescribing when he is under the orders of a superior medical officer. This is but natural and entirely in keeping with military discipline.

In our base hospitals, however, the matter can be and, in at least two instances of which we have personal knowledge, is of a very different character. Here homœopathy should be relied upon to the fullest extent in each and every case to which it legitimately applies. If ever there was a golden opportunity to advance the interest of homœopathy, now is the psychological moment. The time and hour have come; homœopathy is on trial before those in authority. If they are to be convinced of the truth and justice of our claims, we must be the demonstrators. Should we fail, let us forever after cease our clamor for recognition and adoption. (Editorial in the *Homœopathic Recorder*, April, 1918.)

CORRESPONDENCE

An Imperative Appeal for Medical Officers

The following urgent and imperative appeal for doctors for the Medical Reserve Corps has just been issued by the Surgeon General of the United States Army.

"There are, today, 15 174 officers of the Medical Reserve Corps on active duty, and the Medical Department has reached the limit of medical officers at the present time available for assignment. With these facts before the medical profession of this country, we believe that every doctor who is physically qualified for service, between the ages of 21 and 55 years, will come forward now and apply for a commission in the Medical Reserve Corps.

"So far the United States has been involved only in the preparatory phase of this war. We are now about to enter upon the active or fighting phase, which will make enormous demands upon the resources of the country. The conservation of these resources, especially that of man-power, depends entirely upon an adequate medical service.

"Drafts of men will continually follow drafts, each of which will require its proportionate number of medical officers, and there are at this time on the available list of the Medical Reserve Corps an insufficient number to meet the demands of these drafts.

"The real necessity for the complete mobilization of the entire profession is imperative. It is not a question of a few hundred men preparing for service, but of the mobilization of the profession for the conservation of the resources of this country. Let every doctor who reads this appeal from the Surgeon General, which appeal is based upon dire necessity, act promptly and present his application for a commission in the Medical Reserve Corps at the nearest Medical Examining Board."

Regulations Concerning the Publication of Medical Papers by Army Officers

In a letter received from the Surgeon General's Office, attention is called to the following memorandum issued by this office to medical officers of the Army:

1. Attention of medical officers is directed to the provisions of paragraph 423, M.M.D.—"Medical Officers will not publish professional papers requiring reference to official records or to experience gained in the discharge of their duties without the previous authority of the Surgeon General,"

2. Numerous scientific papers written by officers of the medical department have recently appeared in the medical press without specific authority from this office. This practice will be discontinued, and the above regulation will be strictly complied with.

3. Officers desiring publication of professional papers will submit two copies to the Surgeon General with request for permission to publish same. Upon approval, a copy will be forwarded to the journal designated by the officer for publication.

LIFE HABITS OF THE "COUTIE"

The following amusing excerpt is from a letter recently received from First Lieut. Conrad Wesselhoeft, who is with the American Expeditionary Forces in France.

"The coutie is a remarkable animal. He breeds in the clothing of man, feeding upon the body of its host, hurting or not hurting by its bite, according to its frame of mind. When ugly it is difficult to find, being skilled in camouflage; but when kindly disposed toward its host it can be found in the hem of the O. D. shirt and inside the collar. Those who have favored me with their presence prefer the abdomen. In this region they show great speed, being able to escape before one can expose the surface of the skin. In the dorsal region, between the scapulæ, they bite with exceeding vigor, and their attack is continuous. I have never grown a new generation, because I always make it a point to rid myself of them before the breeding season opens, which is usually at night; consequently, I have no first-hand knowledge of their breeding habits or the result of inbreeding. However, from my inspections, I have evidence that the strain decreases in virulence after repeated inbreeding, as shown by the fact that his host seems frequently to be undisturbed by the parasite. This might also be explained by an increased immunity on the part of the host, but this theory is not tenable, in view of the absence of immunity to the analogous activity of mosquitos.

"The bite of the coutie is no less disturbing than the crawling sensation due to its epidermal foraging tours. The latter symptom is aggravated by a finger-nail barrage on the part of the host. Just how certain hosts overcome this disturbing element after a tenth generation is perplexing, but I am authoritatively informed by such soldier hosts that they are not discommoded by the migrations of the parasite. Perhaps the sensation becomes so general that it is lost to the higher centers

of the afferent nerves, thus failing to give rise to efferent reflex muscular activity.

"The coutie at first sight presents an ungainly appearance, but after familiarity with the species is attained, one perceives a very intelligent look in its countenance. Even when caught and held between the thumb and forefinger it fails to express fear, but lies dormant like a potato bug. That it is clever, must be conceded. It has acquired the tactics of modern warfare, as it prefers a trench to the open, attacks on the barrage plan and reverts again to trench positions. It is no respecter of rank, keeps usually under cover and camouflages in the open. I fail to understand the preconceived idea of the human race that the coutie is a vile insect; on the contrary, its presence may have no connection with the habits of the host, unless, of course, the host raises a herd of them. It is certainly no more ungainly than the fly, mosquito, robin or deer, providing one does not associate it with filth. I assure you I myself have been bitten by couties within six hours of having bathed. I cannot therefore concede that the coutie prefers filth; in fact, I have read in Fanine's book on 'Military Hygiene' that soldiers have sometimes found an extreme state of bodily filth to be protective against them. I have yet to be convinced of the truth of this statement, and am inclined to believe that the growth of the coutie is self-limited, as is that of the yeast by its production of alcohol."

HOMŒOPATHIC PERIODICAL LITERATURE

The Clinique. January, 1918

1. *Sterilization of surgeons' knives and scissors by heating in liquid petrolatum.* (Ed.) 12.

Immersion of cutting implements for ten minutes in a bath of liquid petrolatum at 150 degrees C. kills all pathogenic organisms, does not injure the temper of the steel, and tends to prevent rusting.

2. *Picric acid in surgery.* 15. Miner, H. R.

The author reports excellent results in the treatment of infected wounds, using picric acid in almost any form, from a 1 per cent. aqueous solution to the powder. Stress is laid on the value of employing this treatment early, for the first dressing if possible. Similar experience by other workers is referred to.

3. *Eclampsia.* 19. Birdsall, G. E.

The importance of emptying the uterus early is emphasized.

4. *Ear disease in general practice.* 23. McBean, G. M.

The author calls attention to the importance of a routine ear examination.

5. *Things fundamental in dermatology.* 26. Collins, C. D.
A review.

6. *Radical surgery in traumatic deformities.* 32. Beebe,
H. M.

The conclusions are: Radical surgery for traumatic deformities is preferably a late procedure; autogenous material is better for internal splinting purposes, but not always efficient to hold fragments; foreign bodies as internal splints are occasionally the only means of maintaining reduction; closed reduction and maintenance of reduction by adequate splintage suffice in the vast majority of fractures.

7. *Sigmoidoscopy.* 35. Patterson, F.

Homœopathic Recorder. January, 1918

8. *Homœopathy, scientific, — in relation to matter and spirit.*

5. Brouse, H. K.

9. *President's address.* 9. Dienst, G. E.

10. *Doctrine of signatures in medical lore.* (Continued.)

16. Ramseyer, A. A.

Enough has, perhaps, been said of this article in reviewing the preceding instalment.

11. "*Over the top.*" 31. Jones, E. G.

We venture to suggest, after a careful perusal, that "camouflage" would be more appropriate as a title; the thought is admirably concealed.

Iowa Homœopathic Journal. January, 1918

12. *Pneumonia.* 9. Thompson, C. F.

A few remarks on treatment, with report of a few cases. The author recommends the application of warm camphorated oil to the chest, and makes the statement that "camphor is readily absorbed by the skin and taken into the circulation without decomposition." Why is hypodermic administration ever employed then, we wonder? The author also derogates the fresh air treatment unless the air is heated to 65 or 70 degrees.

13. *The epilepsy problem.* 12. Held, W.

A rather confused and confusing article. The author is evidently an enthusiast, who has hit upon the possibility of epilepsy's being due to an endocrine disharmony, and wishes to discredit all other ætiologic factors. We are told that all the frequently ascribed causes of epilepsy are erroneous, *viz.*, "heredity, syphilis, reflex irritation, traumatism —." Angels and ministers of grace defend us! Not all cases of the Jacksonian type are cured after decompression; *ergo*, pressure is not the cause. The sublime blunders which can make a man overlook the importance of a post-traumatic gliosis in producing a cortical irritation is marvelous.

Again, "all reputed causes are more or less speculative," whereupon we are given a lengthy paragraph or two designed to *prove* that the glands of internal secretions are the almost sole cause of convulsions. The value of a certain "antiepileptic serum" is extolled, but the method of preparation is so vaguely described, and the details of administration so few, that further comment is reserved.

14. *The effect of dental abscess on general health.* 3. Evers, H. S.

February, 1918

15. *The significance of hæmorrhage in pregnancy.* 9. Cogswell, J. W.

A review of the various causes. The author emphasizes the fact that "no hæmorrhagic discharge from the genital tract during the period of pregnancy is negligible under any circumstances."

16. *Tumors of the mammary gland.* 16. Anon.

The only safe way is to remove all tumors early, be they in old or young. The x-ray and radium are of some value in inoperable cases.

17. *Annual congress on medical education and licensure.* 24. Royal, G.

The Polychrest. January, 1918

18. *The sympathetic nerve again.* 11. Carpenter, W. B.

19. *Physiology of the uterus and ovaries.* 15. Humphrey, W. A.

20. *Action of gelsemium upon the intestinal movement.* 29. Hinsdale, A. E.

The Chironian. December, 1917

21. *An appreciation of William H. Van Den Burg.* 237. Dearborn, F. M.

22. *Building the hospital—organization and methods.* 240. Bartine, O. H.

23. *Report of fracture clinic.* 248. Kellog, E. W.

24. *Report of the Committee on Public Institutions.* 251. Dearborn, F. M.

A report on the homœopathic institutions in the Borough of Manhattan. In general, it may be said that considering the present conditions, these institutions are doing as well as may be expected.

25. *Increased blood pressure and arterio-sclerosis.* 260. Sleight, B. H.

26. *Materia Medica.* 265. Coleman, D. E. S.

A review of the important symptoms of *Spigelia*, *Kalmia latifolia*, and *Cactus grandiflorus*.

27. *Serum treatment in hæmorrhage disease of the new-born.*

270. Abbott, W. H.

"Treatment must be started very early, as irreparable damage may be done by the hæmorrhage to some internal organ.

"The usual dose of serum is 20 to 30 c.c., to be repeated from two to six times in 24 hours. It should never stand over 48 hours. Injections are given subcutaneously or intramuscularly. Usually treatment is effectual in 34 hours, and practically always can be discontinued in 48 hours."

"In the selection of a donor the usual care should be observed."

British Homœopathic Journal. December, 1917

28. *Notes on "Soldier's Heart."* 340. Reed, W. C.

29. *Oxalic acid.* 345. Beale, A. A.

This drug has proved valuable in the treatment of various "rheumatic" muscular pains, presumably due to an oxalic acid toxæmia.

January, 1918

30. *Cerebral symptoms during the course of acute rheumatism.*

1. Hawkes, A. E.

31. *Natrum muriaticum, phosphorus and sepia; comparisons and contrasts.* 6. Weir, J. W. O.

Pacific Coast Journal of Homœopathy. February, 1918

32. *Address by Dr. F. H. Cookinham,* 55.

33. *The year's review of homœopathy.* 59. Buffum, J. H.

34. *The tissue remedies.* 65. Monroe, A. L.

35. *The wound treatment of Dakin and Carrel.* 77. Connell, K.

36. *Scarlet fever — history, epidemics, mortality.* 79. Ewing, E. E.

37. *Scarlet fever. Etiology — diagnosis — sequelæ.* 81. Kapp, M. W.

38. *Prophylactic treatment of scarlet fever.* 83. Shelton, C. H.

39. *The medical treatment of scarlet fever.* 86. Shepherd, H. L.

The remedies usually indicated in uncomplicated cases are *aconite*, *belladonna*, *gelsemium*, or *veratrum viride*. Indications are given for less frequently used drugs, such as *rhus toxicodendron*, *apis mellifica*, *ammonium carbonate*, *ailanthus*, *hydrochloric acid* and *lachesis*.

40. *Means of easing labor.* 90. Anderson, A. H.

41. *The psychology of the soldier.* 95. Martin, G. H.

March, 1918

42. *Symptomatology of anterior poliomyelitis.* 107. Lischner, H.

43. *The pathology of acute anterior poliomyelitis.* 110. Myer, E. W.

This summary of the subject treated contains the false statement that in the spinal fluid of cases of poliomyelitis "a slight decrease in the number of leukocytes is usually found."

44. *Medical treatment of poliomyelitis.* 114. Hawkes, W. J.

45. *Electrical treatment of acute poliomyelitis.* 122. Martin, G. H.

46. *Surgical treatment of infantile paralysis.* 129. Watkins, J. T.

The North American Journal of Homœopathy. February, 1918

47. *A year's experience with autohæmic therapy.* 117. King, J. W.

48. *Asthma cured by autogenous therapy.* 126. Stone, S. R.

49. *Medico-physical methods in medical practice.* 127. Bond, S. E.

50. *Circumcision of the female.* 143. Hubbell, E.

51. *Facts about epilepsy.* 147. Held, W.

52. *The super- and the sub-normal parent.* 163. Redfield, C. L.

The Hahnemannian Monthly. March, 1918

53. *A clinical study of the first forty-eight hours of pneumonic fever in a series of two hundred and twenty cases.* 129. Golden, G. M.

54. *Early recognition of mental abnormality by the general practitioner.* 142. Klopp, H. I.

"It is the duty of the physician to study such danger signals as appear in the form of moods, wayward reactions, lack of stability, day dreaming, lost capacity for occupation, odd attachments, unwise enthusiasms, unusual interest in religion or abstract questions; and to make a serious attempt to know what factors beneath the surface led to the observed peculiarity; also such early manifestations as reticence, seclusiveness, stubbornness, brooding, sensitiveness, unfounded suspiciousness, together with strange behavior; furthermore, all sorts of so-called nervous symptoms, moodiness, depression, indecision, insistent doubts and uncertainties, uncalled-for feeling of being at a disadvantage, exaggerated anxiousness and timidity, feelings of inferiority, sexual uncertainties and doubts, peculiarly marked mental attitudes, visionary tendencies, unusual elation and erratic conduct."

55. *The value of the homœopathic remedy in gynæcology.* 159. Gregg, A.

Kreosote was found useful in the menorrhagia of a woman of 42, the choice of the remedy depending upon the presence of a great quantity of very dark, bloody discharge with very offensive odor. Apocynum is recommended for amenorrhœa in young girls.

56. *Gun-shot wounds of the abdomen.* 161. Hammond, W. N.

57. *The homœopathic prescription.* 164. Howard, E. M.

"Nearly all repertories include material obtained from clinical and other sources, notably symptoms that have disappeared after the administration of a drug, which effect may or may not have been due to the action of the drug in question. Such symptoms, mixed without ear-marks indiscriminately with known pure drug effects, are not reliable data upon which to hang the issues of life and death. Such records may be useful and ought to be preserved; their value as pointers of possible drug action may be great; but their real status must be determined largely by the surroundings and circumstances under which they are observed. Surely, their use as the basis of a prescription is dangerous and uncertain.

"By far, however, the greatest objection to the repertory as the *sole* basis for the selections of drugs is its isolation of the symptoms. Single symptoms torn from their surroundings, and from the conditions under which they have occurred, may easily be wrongly interpreted and their relative importance overestimated. In the repertories, symptoms are graded by some system arbitrarily adopted by each author and classified according to their quality and supposed importance. For instance, in Jahr's and Possart's repertory, symptoms printed in ordinary type are ordinary pathogenic symptoms not yet confirmed by practice. Those in italics are symptoms observed in several provers, or clinical symptoms which disappeared during treatment. Capitals are reserved for, first, pathogenetic symptoms confirmed by clinical experience, and second, for those which have yielded to treatment without being pathogenetic symptoms.

"All such classification is redolent with human possibility for error. It is evident, therefore, however valuable may be the helpfulness of the repertorial analysis, that it is based upon questionable data and is not comparable, as has been so forcibly claimed, with the analytic methods of chemistry and other sciences, which do have a strictly scientific basis.

"The numerical preponderance of the appearance of a drug in a repertorial analysis has been much counted on. This does not, however, always measure the degree of similarity, because it does not take into account the relative importance of each symptom to the particular case being studied. There is indeed

a natural reluctance upon the part of most men towards the general acceptance of mere numerical data as the arbiter of prescription discussions. We instinctively rebel at the mathematical result, and recognize that one cannot properly estimate the relative value of the symptoms which may appear with such frequency in any individual case.

"For the selection of the most similar drug, I have seen as yet no suggestion better than the method used by Hahnemann himself, and thoroughly explained and illustrated by him in his *Materia Medica Pura*, Vol. 1, *Preamble*. It is herein shown that he took up each striking symptom in his case, considered it in all its relationships, compared it with other drug effects of similar import, and when he had summed up such study, he had arrived at a very definite decision as to the drug or drugs that should be used in accordance with the law of similars in this particular case.

"There is no royal road or short method for acquiring skill in homœopathic prescribing. If it could be reduced to a mathematical basis, or be certainly and surely done by simple repertorial analysis alone, it would need no general medical knowledge to perform it, and could be accomplished by any person of ordinary ability."

The Homœopathic Recorder. February, 1918

58. *Antityphoid inoculation and its after-effects*. 53. Hawkes, W.

This article is essentially similar to one on the same subject published by H. in the *Pacific Coast Journal of Homœopathy* of January, 1918. An extensive critical review of that appeared in the *March Gazette*, and the points set forth there are applicable here.

59. *Clinical cases*. 64. Wright, J. E.
 60. *Plumbum; proved action*. 65. Barber, G. L.
 61. *Baryta muriatica in the respiratory sphere*. 68. Wilde, S.
 62. *Sole remedies for children*. 69. Dienst, G. E.
 63. *Items of interest*. 74. Jones, E. G.
 64. *Value of urine analysis in pregnancy*. 82. Mitchell, C.

April, 1918

65. *Prescription aids from Boenninghausen*. 167. Turner, M. W.

66. *Something of interest*. 178. Jones, E. J.

The evaluation of this article, expressed in the meaningless title, is the author's.

67. *A case of hypernephroma*. 182. Mitchell, C.

68. *The x-ray treatment of uterine cancer*. 185. Grubbe, E. H.

The Chironian. January, 1918

69. *An appreciation.* 283. Thomason, H. D.
70. *Modus operandi.* 286. Stewart, R. A.
71. *Old Fort Ontario.* 290. Henry, C. R.
72. *Fort Ontario as Unit N knows it.* 294. Danenburg, L.
73. *Military phases of surgery.* 318. White, J. F.
74. *The surgeon's military preparation.* 320. Thompson, A. F.
75. *Observations and incidents of medical routine in the army.* 322. Burns, J. P.
76. *Professional work in a base or general hospital.* 326. Bodenheimer, M.
77. *Special military work.* 328. Cornwell, F. W.
78. *Detachment impressions.* 334. Whitmarsh, R. H.
79. *The pathologic viewpoint.* 336. Willan, E. H.
80. *Awaiting the call.* 338. Cunningham, J. J.
81. *Camp sanitation.* 340. Rogers, E. B.
82. *Reflections of a Red Cross nurse.* 342. Gallaher, E.

DIAGNOSIS AND THERAPEUTICS

A simple test for glycuronates in the urine. Askenstedt, F. C.: Jour. Lab. & Clin. Med., Feb., 1918, iii.

"As a result of the activities of the intestinal flora a number of toxic products of the aromatic series, such as indol, skatol, cresol, and phenol, are to be found in greater or lesser amounts in the human intestine. Much of these products is eliminated with the feces, while a part becomes absorbed into the portal circulation. The toxic action of these aromatic bodies is neutralized by conjugation with sulphuric acid or with glycuronic acid in the liver. Thus are formed, on the one hand, indoxyl-glycuronic acid, skatoxyl-glycuronic acid, cresol-glycuronic acid, phenol-glycuronic acid; and, on the other, corresponding combinations with sulphuric acid, the so-called ethereal sulphates.

"The urine to be examined is diluted with water until its specific gravity is reduced to 1.001. For example, if the urine has a sp. gr. of 1.015 (correction being made for temperature), dilute 1 c.c. of urine with 14 c.c. of water; if the sp. gr. is 1.021, dilute 1 c.c. with 20 c.c. of water. (Diabetic urine should be diluted until its urea content is 0.1 per cent.) To 10 c.c. of the diluted urine in a test tube add one or two drops of a 1 per cent. solution of alpha-naphthol in glycerin (alcohol impairs the test), and then 10 c.c. hydrochloric acid, sp. gr. 1.19. Mix by turning the tube over once or twice. Then let the tube stand in a dark, cool place for about twelve hours, after which the

reaction is noted in reflected light. This is best done by holding a white surface, as, for example, a white blotter, behind the tube. Normally the fluid will remain colorless or show a mere suggestion of blue. If glycuronates are present in excess, there will appear a proportionate blue color, tinged with red.

"In estimating the clinical value of the test it must be remembered that the excretion of an unusual amount of glycuronates or indican may be consistent with health. So long as the liver is functionally adequate to neutralize the entire amount of the toxic materials brought to it by the portal vein, little or no harm results, but a constant overstimulation of any function of the body tends to ultimate insufficiency, and a constant excessive production of indican and glycuronates is a positive signal of present or approaching danger."

A Study of Sixty-two Cases of Diabetes of Fifteen or More Years' Duration. Hornor, A. A., and Joslin, E. P., *Am. J. Med. Sc.*, 1918, clv, 47.

Conclusions:

1. In a series of 1,187 cases of diabetes, of whom 1,156 are traced, 640 are living and 516 are dead; among these were 62 who lived fifteen or more years, or 5 per cent., and of these 37 are living and 25 are dead.
2. Obesity is universal in the long-lived diabetic. It was demonstrated in 60 cases out of 62.
3. A diabetic heredity is one and one-half times as frequent among the cases of fifteen or more years' duration as among all the diabetic patients.
4. The average loss of weight when the patient first came for treatment was 41 pounds.
5. Gall-stones were recognized in 8 cases, being six times as frequent among the 62 cases as in the entire series of 1,187.
6. The presence of acidosis was demonstrated 21 times, and 11, or 44 per cent., of the fatal cases succumbed to it. By the avoidance of acidosis the lives of these patients might have been prolonged.
7. Arteriosclerosis occurred in 36 cases, and was a prominent factor in causing the death of 10 patients.
8. Diabetes is now a minor issue in 50 per cent. of the living patients, and at the time of death was a minor issue in 28 per cent. of those who had died. An extremely rigid diet is necessary for only 4 of the patients now living.
9. Of the fatal cases, 20 per cent. outlived the normal expectation of life for their age at the onset of their diabetes, and this is already true for 10 per cent. of the living cases.

10. Dietetic treatment was carried out to a considerable degree by 57 cases. Of the remaining 5 cases, 3 are among the dead.

The Present Status of Hodgkin's Disease. Beifeld, A. F., Am. J. Med. Sc., 1918, clv, 409.

1. A diphtheroid organism has been found in a number of conditions seemingly unrelated to Hodgkin's disease. Steele, and also Simon and Judd, isolated the bacillus from the lymph-nodes of lymphoid leukæmia; Rosenow has found it in arthritis deformans, and in goiter, and Bunting in chronic leukæmia, lymphosarcoma, chloroma, Banti's disease, etc. In a case of von Recklinghausen's disease reported by Elliot and Beifeld, the diphtheroid organism was apparently present in some of the subcutaneous nodules. It would appear that Bunting and Yates have receded materially from their original emphatic stand, relative to the specific nature of this bacillus, in conceding that it is found in a number of conditions other than Hodgkin's disease. They assuredly do not strengthen their position by maintaining that those diseases in which the bacillus has been found — leukæmia, lymphosarcoma, etc.,— are genetically related because the same organism may be common to all. Finally, as pointed out by Bloomfield, a diphtheroid bacillus may be present in lymph-nodes which are apparently in normal condition.

2. In addition to the diphtheroid bacillus, other organisms are not infrequently found in Hodgkin's gland. Thus Rosenow, while able to cultivate the diphtheroid bacillus from all of 40 cases, found in 17 of these cases a *staphylococcus*, in 7 the *streptococcus viridans*, in 14 an organism resembling *bacillus welchii*, and in 6 gram-negative bacilli. The coexistence of the diphtheroid bacillus and the tubercle bacillus has already been commented upon.

3. Immunological studies have cast serious doubt upon the specific character of the organism in question. Olitsky, and more recently Moore, were able to obtain what appeared to be satisfactory antigens in their work, and yet in only one of their cases, this being one of Moore's series with syphilis in addition, did they observe fixation of complement. Nor, in the process of active immunization with these organisms, did Moore obtain an increase in the specific agglutinative power of his patients' sera. These findings, while not conclusive, are highly suggestive, for with a satisfactory antigen one may look for the fixation of complement if the antigen be specific.

4. Bloomfield, in a mixed series of cases, some with practically normal lymph-nodes, others with a distinct pathology, isolated 29 different strains of organisms. More positive cultures were obtained from diseased than from relatively normal glands. No

correlation was evident between a given organism and a specific tissue change. The relative avascularity of the lymph-glandular tissue possibly predisposes to the localization of microorganisms, some of which may be traced to contiguous infections, while others are saprophytic and correspond to the flora of the body surfaces. Belonging to the latter class is the pseudodiphtheria bacillus, which would account for its occasional presence in normal glands, and its frequent or, as the case may be, regular occurrence in pathological tissues which favor its growth.

As to the conveyance of the disease to animals, reports are not entirely in accord. Bunting and Yates have stated that it was possible to reproduce the disease in typical form in the monkey, provided the organism injected was not too virulent and the injections not too frequent to cause the early death of the animal. Moore, on the contrary, was unable to produce a lesion resembling that of Hodgkin's disease in his work. Rhea and Falconer had obtained no results in the conveyance of the disease to a monkey, up to the time their paper was published, and no further report, so far as we know, has come from them. Lanford, using the guinea-pig, was likewise unsuccessful. And, finally, the entire matter is further obscured by the work of Steiger, already referred to, in which by means of the bacillus of bovine tuberculosis, he produced the granuloma in the rabbit.

Though the question of the relation of the diphtheroid organism cannot be called a settled matter, the evidence against its being the specific cause of Hodgkin's disease is constantly increasing, so that we are perhaps not premature in concluding that little of the original contention of Bunting and Yates has stood the test of recent studies.

In a process of this kind, which is in all likelihood of an infectious nature, progress in treatment may be expected to go hand in hand with an increased knowledge of the character of the infectious agent. Our early hopes in vaccine therapy have declined with our increasing doubt of the specificity of the so-called *corynebacterium hodgkini*; and, although we still hear of cases which derive apparent benefit from vaccines, we believe that this method of treatment is gradually falling into disuse. Surgical intervention offers hope in no greater degree, perhaps, than in malignancy, namely, insofar as the affected tissues can be removed completely, which is rarely possible. If the Hodgkin process can be conclusively linked with a definite source of infection, and that source be eradicated before the disease has made too great progress, a cure may perhaps be hoped for. Meanwhile, we must content ourselves with our earlier methods, namely, arsenic, the Roentgen rays, and possibly radium.

Therapeutic Experiments with Rosenow's Antipoliomyelitic Serum.

Amoss, H. L., and Eberson, F., *Journal Exper. Med.*, 1918, 27, 309.

Two series of experiments are described in which Rosenow's antipoliomyelitic serum, so-called, has been compared with the immune serum derived from monkeys which have convalesced of recovered from experimental poliomyelitis.

The experiments consisted in introducing an active virus of poliomyelitis into the blood and of injecting the two kinds of serum into the cerebrospinal meninges according to the method of Flexner and Amoss.

Under the conditions of the experiment, the control monkeys (a) receiving the virus intravenously alone do not develop paralysis, while those (b) receiving the virus intravenously and normal horse serum intraspinally develop paralysis. Moreover, the monkeys (c) receiving the virus intravenously and Rosenow's antipoliomyelitic serum intraspinally develop paralysis in the manner of those receiving normal horse serum intraspinally. The monkey (d) which received the virus intravenously and the convalescent or immune monkey serum intraspinally alone did not develop paralysis.

The Rosenow serum acts in the manner of normal horse serum; it promotes the passage of the virus of poliomyelitis from the blood into the nervous organs, and it does not protect from infection.

We have found no evidence that Rosenow's serum under the conditions of the tests is effective therapeutically in monkeys or possesses antibodies of the same nature as those present in the blood of monkeys which have recovered from experimental poliomyelitis.

Since the antibodies in convalescent poliomyelitic serum in man and the monkey are identical, it follows that any antibodies present in the Rosenow horse serum do not conform to those occurring in human convalescent serum.

Common Colds as a Possible Source of Contagion for Lobar Pneumonia. Valentine, E. J. *J. Exper. Med.*, 1918, xxvii, 27.

The pneumococcus has been assumed to be one of the positive agents in common colds because of its known pathogenicity and because of its not infrequent predominance of the mucous discharges. A series of common colds was examined to determine the types. The pneumococcus was found in 43 out of 63 cases, the type incidence being (1) two cases; (2) two cases; (3) (pneumococcus mucosus) four cases; (4) 35 cases.

The recovery of the fixed parasitic types, 1 and 2, is of a present interest to the case of Type 1 infection. They had not been in contact with pneumonia and this type was found to be the pre-

dominating organism, which strongly suggests that it was the ætiological agent in these colds; with such evidence, therefore, they must be regarded as potential sources of infection for others, or as sources of possible autogenic cases of labor pneumonia.

BOOK REVIEWS

Delusions and Dreams. An Interpretation in the Light of Psychoanalysis of "Gradiva," a novel by Wilhelm Jensen which is here translated by Dr. Sigmund Freud. Translated by Helen M. Downey, M.A. Introduction by Dr. G. Stanley Hall, President of Clark University. Published by Moffat, Yard & Company, New York. Price \$2.00.

This is at once the most charming and the most illuminating book we have yet seen on the subject of psychoanalysis.

Jensen's story as translated consumes the first half of the book and is fascinating, not only as a bit of delightful fiction for the lay reader, but to the physician depicts a case of psychoneurosis with great accuracy; so correct that in the early part of the story one shares the bewilderment of the hero.

Freud's scientific analysis of the fiction leads him to the same conclusions that the author reaches through his artistic sense, and this proves the correctness of both. It is in this analysis that the physician is especially interested, for it picks the neurotic acts of the hero to pieces and shows how the underlying unconscious motives determined them, though the hero ascribes entirely different purposes to what he does. It also shows how the adroit and tactful Gradiva straightens out her lover's delusions and so wins him back to normality and to herself.

It is one of those rare books which offers to one's moments of relaxation both pleasure and instruction. The publisher is to be complimented for having produced a light and readable book.

Manual of Histology. Henry Erdmann Radasch, M.Sc., M.D., Assistant Professor of Histology and Embryology in the Jefferson Medical College, and Instructor in Anatomy in the Pennsylvania Academy of Fine Arts, Philadelphia, Pa. Pp. 580 with 307 illustrations. \$2.50. P. Blakiston's Son & Co., Philadelphia, 1918.

This manual is an elaboration and amplification of Radasch's compend of histology, with special expansion of the chapters on histological technic and on the nerve system. Illustrations are fairly profuse, and many of these are reproductions of original photomicrographs. The book is intended for textbook use by medical students, but should prove valuable as well to all others having occasion to employ histological technic.

LETTER FROM THE SURGEON GENERAL

TO THE EDITOR:

1. I wish to call to the attention of the profession at large the urgent need of additional medical officers. As the war progresses the need for additional officers becomes each day more and more apparent. Although the medical profession of the country has responded as has no other profession, future response must be greater and greater. The Department has almost reached the limit of medical officers available for assignment.

2. I am, therefore, appealing to you to bring to the attention of the profession at large the necessity for additional volunteers. So far the United States has been involved only in the preparatory phase of this war. We are now about to enter upon the active, or the fighting phase, a phase which will make enormous demands upon the resources of the country. The conservation of these resources, especially that of man-power, depends entirely upon

an adequate medical service. The morning papers publish a statement that by the end of the year a million and a half of men will be in France. Fifteen thousand medical officers will be required for that army alone. There are today on active duty 15,174 officers of the Medical Reserve Corps.

3. Within the next two or three months the second draft will be made, to be followed by other drafts, each of which will require its proportionate number of medical officers. There are at this time on the available list of the Reserve Corps an insufficient number of officers to meet the demands of this draft.

4. I cannot emphasize too strongly the supreme demand for medical officers. Will you give the Department your assistance in obtaining these officers? It is not now a question of a few hundred medical men volunteering for service, but it is a question of the mobilization of the profession that in the large centers of population and at other convenient points as well as at all Army camps and cantonments, boards of officers have been convened for the purpose of examining candidates for commission in the Medical Reserve Corps of the Army. An applicant for the Reserve should apply to the Board nearest his home.

5. The requirements for commission in the Medical Reserve Corps are that the applicant be a male citizen of the United States, a graduate of a reputable school of medicine authorized to confer the degree of M.D., between the ages of 22 and 55 years of age, and professionally, morally, and physically qualified for service.

6. With deep appreciation of any service you may be able to render the Department, I am

(Signed) J. C. GORGAS,

Surgeon General, U. S. Army.

TOXICITY OF ARSPHENAMIN (SALVARSAN)

The following letter was received from the Treasury Department, United States Public Health Service, Washington:

The Editor,
NEW ENGLAND MEDICAL GAZETTE
80 E. Concord Street,
Boston, Mass.

April 5, 1918.

Dear Sir:

In view of the reports in current medical literature of untoward results from the use of arsphenamine and neo-arsphenamine, I have to request that you give publicity to the statement that it is requested that samples of any lots of these arsenicals which have shown undue toxicity be forwarded to the Hygienic Laboratory for examination.

In sending these samples it should be ascertained that the lot number is the same as that of the ampoules used on patients. The samples sent should, if possible, be accompanied by a brief note stating the approximate body weight and age of the patient, the dose and dilution of the drug given, the symptoms and result; that is, whether fatal or not.

Respectfully,

(Signed) G. W. McCoy,

Director.

It is requested that replies be addressed to the Director, Hygienic Laboratory, 25th and E Streets, N. W.

SOCIETY MEETINGS

Massachusetts Homœopathic Medical Society

The seventy-eighth annual meeting of the Massachusetts Homœopathic Medical Society was held April 10 at the Evans Memorial Auditorium.

The morning program was given over to medical, surgical and special clinics at the Massachusetts Homœopathic and Emerson Hospitals and to demonstration of pathological specimens at the laboratories of the medical school, Evans Memorial, and Emerson Hospital. In the afternoon the business session was followed by reading of the following papers:

1. *Diagnosis of Gastric Ulcer.* J. Emmons Briggs, M.D., Boston, Surgeon to the Massachusetts Homœopathic Hospital.

Discussion opened by Geo. W. Roberts, M.D., New York City.

2. *Goitre Surgery—Based on Two Hundred Goitre Operations by the Reader.* Frank H. Lahey, M.D., Boston, Surgeon to Boston City Hospital.

Discussion opened by C. T. Howard, M.D., Boston.

3. *Renal Infection—With Illustrative Cases* (Lantern Slides). Louis Rene Kaufman, M.D., New York City.

The address at the annual dinner was made by Hon. Charles P. Batchelder, former delegate of the Secretary of the Interior of the Philippines, whose subject was "Problems of the Far East."

Officers and executive committee for the year 1918-1919 are the following:

President:	William H. Watters, M.D., Boston
First Vice-President:	Wesley T. Lee, M.D., Boston,
Second Vice-President:	George N. Lapham, M.D., Rutland,
Recording Secretary:	Edw. S. Calderwood, M.D., Roxbury,
Corresponding Secretary:	Benjamin T. Loring, M.D., Watertown,
Treasurer:	Thomas M. Strong, M.D., Boston,
Chairman of the Board of Censors:	Alonzo G. Howard, M.D., Boston.

Southern Homœopathic Medical Association

The annual meeting will be held at Knoxville, Tennessee, November 20, 21 and 22, 1918.

Officers

President:	Dr. H. M. Stevenson, Baltimore, Md.
First Vice-President:	Dr. A. L. Smethers, Anderson, S. C.
Second Vice-President:	Dr. J. L. Jennings, Danville, Va.
Secretary-Treasurer:	Dr. F. A. Swartwout, Washington, D. C.

Bureau Chairmen for the coming annual meeting

Practice of Medicine:	Dr. A. L. Smethers, Anderson, S. C.
Materia Medica:	Dr. A. E. Hinsdale, Columbus, Ohio
Gynæcology:	Dr. E. L. Sappington, Washington, D.C.
Surgery:	Dr. Claude A. Burrett, Columbus, Ohio
Ophthalmology and Laryngology:	Dr. Gilbert F. Palen, Philadelphia, Pa.
Obstetrics:	Dr. Gilbert FitzPatrick, Chicago, Ill.
Sanitary Science and Hygiene:	Dr. Spencer R. Stone, Atlanta, Ga.

Boston District, Massachusetts Homœopathic Medical Society

At the April meeting of the Boston District Society, held in the Auditorium of the Evans Memorial at 8 P.M., April 4, 1918, the following clinical program was presented:

Diabetes—Two Cases.

An Interesting Heart Case.

An Interesting Case from a Diagnostic Standpoint.

Stephen H. Blodgett, M.D.

Wilson F. Phillips, M.D.

Nelson M. Wood, M.D.

OBITUARY

We, the homœopathic physicians and surgeons of Kansas City desire to express our deep sorrow for the loss of our brother

DR. WALTER S. GOODHUE

who departed this life April 22, 1918.

Only those who were his patients knew better than we the genuine honesty and kindness of heart that this great physician possessed. Naturally of a modest and a retiring disposition, he did not seek the public recognition which was due him, but seemed content to minister faithfully and successfully to those who came under his professional care.

We can each testify that he lived a pure life and conscientiously practiced straight homœopathy in Kansas City for thirty years. He won our highest respect as a gentleman and a practitioner.

Signed:

MOSES T. RUNNELS, M.D.

J. W. CARTLICK, M.D.

C. K. WILES, M.D.

Committee.

LITTLE CHILDREN DEPRIVED OF MILK

That babies and little children are directly affected by the decreased sales of milk reported by dealers in American cities is illustrated by findings for Baltimore made public today by the Children's Bureau of the U. S. Department of Labor.

Of 756 Baltimore children between 2 and 7 years of age, only 29 per cent. are now having fresh milk to drink as against 60 per cent. a year ago. And only 20, or less than 3 per cent. of the children studied, are having as much as three cups a day. With the babies under 2 the Children's Bureau says the situation is a little less serious. Apparently their needs are more generally understood than the needs of the child over 2.

The number of families in this group who are buying no fresh milk at all has risen from 37 a year ago to 107, or 29 per cent. of those from whom information was secured, and these 107 families include one-fourth of all the children under 7. At the same time, the total daily purchase of canned milk by the families studied has increased from 25.5 cans to 84 cans.

Most serious, according to the Children's Bureau, is the general substitution in the children's diet of tea and coffee. Of the 575 children who are not drinking milk, 64 per cent. have definitely substituted tea and coffee, and 24 per cent. are "sharing the family diet" which may or may not include tea or coffee, or milk in other foods.

While the group of families studied is small, the Bureau offers the findings as fairly representative since the information was secured and transmitted to the Children's Bureau by school nurses of the Baltimore Department of Health and by nurses of the Instructive Visiting Nurse Association and the Babies' Milk Fund of Baltimore from all families they visited during a certain short period, provided (1) there were at least two children under 7 years of age; (2) the family had been in Baltimore at least a year; (3) no tubercular patient was living in the family.

Various incomes are reported, but the changes in the amount of milk purchased are not unlike in the different earnings groups. Some mothers seem to realize that milk must be provided for their children at whatever sacrifice; others who can better afford to buy milk do not understand its importance and let their children go without it. The foreign-born mothers, although their incomes are slightly lower than the incomes of the native white mothers, have more generally than any other group continued to buy milk. Almost half of the foreign-born mothers have either continued the amount purchased last year or increased it, and only 1 in 10 of the foreign mothers (as against 1 in 3 of the other mothers) are now buying no milk at all.

The Children's Bureau states: "Taking a pint and a half of fresh milk as the desirable daily allowance for the average child, these 756 children were

having last year on an average only 40 per cent. of what they should have had; this year their daily average has dwindled to 14.4 per cent. of this allowance.

"The work of Children's Year should emphasize in every community the importance of fresh milk in the diet of young children. Without proper nourishment children can not keep well and free from physical defects, and a campaign of education on the feeding of children is an essential part of the saving of 100 000 lives during the second year of the war."

ACTING ASSISTANT SURGEON (FEMALE), \$1 800-\$2 500

PUBLIC HEALTH SERVICE

May 21, 1918

The United States Civil Service Commission announces an open competitive examination for acting assistant surgeon, for women only. Vacancies in the Public Health Service, at salaries ranging from \$1 800 to \$2 500 a year, and in positions requiring similar qualifications, at these or higher or lower salaries, will be filled from this examination, unless it is found in the interest of the service to fill any vacancy by reinstatement, transfer, or promotion. Certification to fill the higher-salaried positions will be made from those attaining the highest average percentages in the examination.

In filling vacancies in this position certification will be made of the highest eligibles residing nearest the vicinity of the place at which the appointee is to be employed, except that upon the request of the Department certification will be made of the highest eligibles on the register for the entire country who have expressed willingness to accept appointment where the vacancy exists.

Appointees to certain positions will be expected to make physical examination of female workers and immigrants, conduct sanitary surveys, and perform other duties of routine character.

Competitors will not be required to report for examination at any place, but will be rated on the following subjects, which will have the relative weights indicated:

<i>Subjects</i>	<i>Weights</i>
1. Physical ability.....	10
2. Education, training, and experience.....	90
Total.....	100

Under the second subject competitors will be rated upon the sworn statements in their applications and upon corroborative evidence adduced by the Commission.

Applicants must have graduated from a medical school of recognized standing, and must show that they have had experience which has rendered them proficient in infant welfare work, school and community hygiene, and analogous problems.

Applicants must have reached their twenty-first but not their forty-fifth birthday on the date of the examination.

Applicants must submit with their applications their photographs, taken within two years. Tintypes or proofs will not be accepted.

The medical certificate in the application form must be executed by an officer of the Public Health Service, except that when this requirement would work a hardship upon an applicant because of her distance from such officer she may have the certificate executed by any physician. In this event, however, she may be required to pass a physical examination before an officer of the Public Health Service before appointment.

This examination is open to all female citizens of the United States who meet the requirements.

Applicants should at once apply for Form 1312, stating the title of the examination desired, to the Civil Service Commission, Washington, D. C.;

the Secretary of the United States Civil Service Board, Customhouse, Boston, Mass., New York, N. Y., New Orleans, La., Honolulu, Hawaii; Post Office, Philadelphia, Pa., Atlanta, Ga., Cincinnati, Ohio, Chicago, Ill., St. Paul, Minn., Seattle, Wash., San Francisco, Cal.; Old Customhouse, St. Louis, Mo.; Administration Building, Balboa Heights, Canal Zone; or to the Chairman of the Porto Rican Civil Service Commission, San Juan, P. R.

Applications should be properly executed, excluding the county officer's certificate, and must be filed with the Civil Service Commission, Washington, D. C., prior to the hour of closing business on May 21, 1918.

FOURTEENTH ANNUAL MEETING OF THE NATIONAL TUBERCULOSIS ASSOCIATION, BOSTON, MASS., JUNE 6th, 7th and 8th, 1918

Preliminary Program (Subject to change)

GENERAL ORDER OF SESSIONS

Thursday, June 6th

2.30 P.M.

Registration opens at headquarters, Copley-Plaza Hotel.

3 P.M.

Meeting Executive Committee.

3.45 P.M.

Meeting Board of Directors.

4.30 P.M.

GENERAL MEETING

Address of the President.....Charles L. Minor, M.D.

Report of the Executive Office.....Charles J. Hatfield, M.D.

Preliminary business of the Association

6 P.M.

Dinner meeting, American Sanatorium Association, place to be announced.
Subject: Standards of Administration for Tuberculosis Hospital. Speaker: H. A. Pattison, M.D., Medical Field Secretary, National Tuberculosis Association. For further information write E. S. McSweeney, M.D., 25 West 45th Street, New York City.

8.15 P.M.

Meeting of the Advisory Council.

Friday, June 7th

9 A.M.

Meeting of Clinical Section.

Meeting of Sociological Section.

12.30 P.M.

Luncheon for Public Health Nurses.

(For details write Miss Bernice W. Billings, State House, Boston.)

2 P.M.

Meeting of Pathological Section.

Meeting of Sociological Section.

4.30 P.M.

GENERAL MEETING

• Reports of Committees,
Election of Directors.

5 P.M.

Meeting Board of Directors.
Round table on Modern Health Crusader Methods.

8 P.M.

Mass meeting under auspices of Local Committee of Arrangements.

Saturday, June 8th

9 A.M.

Meeting Clinical Section.
Meeting Sociological Section.

12.30 P.M.

Meeting and outing National Conference of Tuberculosis Secretaries.

ADVISORY COUNCIL

George Thomas Palmer, M.D., Springfield, Ill., Chairman.

Thursday, June 6th

8.15 P.M.

How France is meeting the tuberculosis war problem, James Alexander Miller, M.D., New York City.

How the United States is meeting the tuberculosis war problem, Frank Billings, M.D., Chicago.

How Canada is meeting the tuberculosis war problem, Capt. Jabez H. Elliott, Member Canadian Military Hospital Commission, Toronto, Can.

CLINICAL SECTION

Walter R. Steiner, M.D., Hartford, Conn., Chairman.

J. E. Murphy, M.D., Hartford, Conn., Secretary.

The following individuals have agreed to present papers in the Clinical Section. Three sessions for the Clinical Section will be provided if necessary.

The fresh air treatment and its results in tuberculosis, Vincent Y. Bowditch, M.D., Boston, Mass.

Title not yet given, Fred H. Heise, M.D., Saranac Lake, N. Y.

One or possibly two papers. Title not yet given, Allen K. Krause, M.D., Baltimore, Md.

The treatment of tuberculous laryngitis by reflected sunlight, Charles W. Mills, M.D., and A. M. Forster, M.D., Colorado Springs, Colo.

Thirty-five hundred cases of tuberculosis which have been treated at the Modern Woodmen Sanatorium for Tuberculosis, J. A. Rutledge, M.D., Woodmen, Colo.

An X-ray study of the lungs in cases of syphilis with tuberculosis, Cleaveland Floyd, M.D., Boston, Mass.

Rest and exercise in the treatment of pulmonary tuberculosis, Hugh M. Kinghorn, M.D., Saranac Lake, N. Y.

Title not yet given, Charles L. Minor, M.D., Asheville, N. C.

Title not yet given, Lawrason Brown, M.D., Saranac Lake, N. Y.

Title not yet given, Joseph H. Pratt, M.D., Camp Devens, Ayer, Mass.

Tuberculosis of the larynx, J. Dworetzky, M.D., Otisville, N. Y.

Pains in the chest, with special reference to pulmonary tuberculosis, John B. Hawes, 2d, M.D., Boston, Mass.

Report of thirteen cases of tuberculosis complicated by diabetes treated by the Allen starvation method, H. R. M. Landis, M.D., Philadelphia, Pa.

Study of the subsequent history of cases discharged from Arequipa Sanatorium as apparently cured during a period of six years, Philip King Brown, M.D., San Francisco, Cal.

Title not yet given, Alfred Meyer, M.D., New York, N. Y.

The necessity for caring for the careless consumptive, John J. Lloyd, M.D., Rochester, N. Y.

Artificial pneumothorax and pregnancy, S. A. Slater, Oil City, Pa.

Non-tuberculous pulmonary conditions as a cause of invaliding, J. H. Elliott, M.D., Toronto, Can.

PATHOLOGICAL SECTION

M. C. Winternitz, M.D., New Haven, Conn., Chairman.

Dr. George H. Smith, New Haven, Secretary.

The program of the Pathological Section has not yet been completed. An interesting series of papers, however, will be read by Lydia M. DeWitt, M.D., Chicago; E. R. Baldwin, M.D., Saranac Lake; S. A. Petroff, Saranac Lake; Paul A. Lewis, M.D., Philadelphia; Allen K. Krause, M.D., Baltimore; and A. H. Clark, M.D., Baltimore.

Probably one session will be taken by the Pathological Section.

SOCIOLOGICAL SECTION

James Minnick, Chicago, Ill., Chairman.

Ernest D. Easton, Newark, N. J., Secretary.

Friday, June 7th

9 A.M.

The problems in the vocational re-education of disabled men, C. A. Prosser, M.D., Washington, D. C.

Reconstruction and rehabilitation work for the tuberculous in the army, Harry E. Mock, M.D., Washington, D. C.

Friday, June 7th

2 P.M.

Farm work for tuberculous patients at Eudowood Sanatorium, Martin F. Sloan, M.D., Towson, Md.

Training of the sanatorium patient in an industrial colony, Bayard T. Crane, M.D., Rutland, Mass.

Eighteen years' experience in ergotherapy and its economic and therapeutic results, Philip King Brown, M.D., San Francisco, Cal.

The utilization of patient labor at the tuberculosis sanatorium at Otisville, Hermann M. Biggs, M.D., New York, N. Y.

Occupation and industrial training of tuberculous cases in sanatoria, J. Roddick Byers, M.D., Ste Agathe Des Monts, P. Q.

Saturday, June 8th

9 A.M.

Three years' experience in the employment of the discharged tuberculous patients in factory work, Edward Hochhauser, New York, N. Y.

Employment of post-tuberculous patients. Experience of International Ladies' Garment Workers' Union, George M. Price, M.D., New York, N. Y.

Experimental workshop. Experience of Pottery Workers' Union, H. R. M. Landis, M.D., Philadelphia, Pa.

SCHOOL OF HYGIENE AND PUBLIC HEALTH

In June, 1916, the Rockefeller Foundation of New York notified the President of the Johns Hopkins University that the Foundation was prepared "to cooperate with the University in the establishment of a School of Hygiene and Public Health for the advancement of knowledge and the training of investigators, teachers, officials and other workers in these fields."

This offer was accepted by the University, and on June 12, 1916, the President of the University made the formal announcement that the Board of Trustees had authorized the establishment of a School of Hygiene and Public Health as part of the University. Dr. William H. Welch was appointed Director and Dr. William H. Howell was named to assist in the work of organization.

The main objects of the School will be to establish courses for the training of qualified persons for public health work, to promote investigative work in hygiene and preventive medicine and provide opportunities for the training of investigators in these subjects, and to develop adequate means for the dissemination of sound hygienic knowledge. Special and mutual advantages are anticipated from

the close relationship between the School and the International Health Board of the Rockefeller Foundation, particularly in field work and in the opportunities for investigation and training in tropical medicine and the control of special diseases. As outlined at present the work of the School will be organized under the following divisions: a department of bacteriology, serology and immunology; a department of protozoölogy and medical zoölogy; a department of epidemiology; a department of statistics; a department of chemical hygiene; a department of physiological hygiene; a general department in charge of field work and administrative methods. Provision will be made for practical work in connection with federal, state and municipal departments of health and for instruction in sanitary engineering, infectious and occupational diseases, and vocational, mental and social hygiene.

I. Course leading to the degree of Doctor of Public Health:

The purpose of this course is to furnish instruction in public health knowledge and methods to those who have a liberal education and a fundamental training in medicine. The course will consist of specified work throughout two years, together with a summer spent in field work in some organized public health service. In the first year the specified work will comprise courses in the following subjects: advanced bacteriology and immunology; the chemical and bacteriological analysis of foods, water and sewage; statistical methods; sanitary and administrative law; nutritional and environmental hygiene; the history of hygiene. In the second year there will be courses in protozoölogy and medical zoölogy, epidemiology, occupational diseases, infectious diseases, sanitation and public health organization, sanitary engineering, and social and mental hygiene. It is understood that these requirements may be modified to suit the needs or aptitudes of special students. Graduates in this course should be prepared to serve as public health officials in those important positions in which the health of large communities is involved and in which relations must be maintained both with the medical profession and the general public. The following groups of students will be accepted as candidates for this degree:

a. Graduates of approved medical schools who have had a liberal education as evidenced by a degree in arts or sciences, or its equivalent. These candidates will be required to pursue a two-years' course together with one summer of practical work in an organized public health service.

b. Students who have completed satisfactorily three years of the course in an approved medical school and who have had a liberal education as evidenced by a degree in arts or sciences, or its equivalent. It is hoped that in the case of these students arrangements can be made for a combined course in medicine and in public health of such a character that the student may receive his degree in medicine on the completion of one year's work, and his degree in public health after an additional or fifth year of work in the School of Hygiene and Public Health, together with a summer spent in practical field work.

II. Courses leading to the degree of Doctor of Science in Hygiene:

It is proposed in planning these courses to base them upon a liberal education and adequate preliminary training in physics, chemistry, biology and the medical sciences. The courses as given in the School will be organized for a period of two years, the equivalent of half of one academic year (15 hours a week) being occupied with specified work of a basic character and the remainder of the time, including an intervening summer, being allotted to advanced work in some special department. This latter part of the work must include or consist of a special investigation of some problem, the results of which are to be presented in the form of a dissertation.

To be accepted as a candidate for this degree the following requirements must be fulfilled:

a. A degree in arts or sciences or its equivalent as evidence of a liberal education.

b. Certificates of the satisfactory completion of the first two years in an approved medical school. The term approved medical school is understood to mean one in which adequate courses in physics, chemistry and biology are required for entrance.

c. In place of (b) separate certificates will be accepted from colleges in good standing of adequate courses in physics, chemistry, biology, anatomy, gross and microscopic, physiology, physiological chemistry, pathology and bacteriology, whether or not the candidate has been registered as a medical student.

III. *Courses leading to the degree of Bachelor of Science in Hygiene:*

The first year's work will consist of courses in physiology, bacteriology, anatomy and histology and the chemical analysis of foods, water and sewage. The second year's work will consist of courses in advanced bacteriology, immunology, medical zoölogy, statistics, nutritional and personal hygiene and sanitary engineering. The requirements for matriculation in these courses will be as follows:

a. Certificate of the completion of at least two years of work in an approved college.

b. Certificates of adequate courses in biology, physics, and chemistry, including organic chemistry.

An opportunity to use the facilities of the School will be granted to the following groups of special students not registered as candidates for a degree:

1. Public health officers who may wish to take one or more lectures or laboratory courses, or engage in the study of some special problem.

2. Other qualified persons who may wish to attend special courses or undertake research work and whose qualifications receive the formal approval of the faculty of the School.

The following courses will be given during the session of 1918-19.

Sanitary and Administrative Law, Pres. F. J. Goodnow.

The History of Hygiene and Epidemiology, Dr. W. H. Welch.

Advanced Bacteriology, Dr. W. W. Ford.

Immunology, Dr. C. G. Bull.

Introduction to Vital Statistics, Dr. Raymond Pearl.

Advanced Statistical Theory, Dr. Pearl.

Chemical Methods Applied to Hygiene, Dr. E. V. McCollum.

Animal Nutrition, Dr. E. V. McCollum.

Physiological Hygiene, Dr. W. H. Howell.

Special Lectures, Dr. Hermann Biggs, Dr. Simon Flexner, Dr. Victor G. Heiser, Dr. William H. Park, Dr. Wickliffe Rose, Dr. Milton J. Rosenau, Dr. William T. Sedgwick, Dr. George C. Whipple.

The charge for tuition in the courses leading to a degree will be \$250 per annum, payable at the office of the Registrar in semi-annual instalments, October 1st and February 1st. For students taking special courses the charge for each course will be arranged on application.

For further information address the Director of the School of Hygiene and Public Health, care of the Johns Hopkins Medical School, Washington and Monument Streets, Baltimore, Md.

SEIZES SO-CALLED HOG-CHOLERA REMEDY

Seizures of sixty-two cases of a so-called hog-cholera remedy in Iowa and North Carolina upon order of the Federal Courts mark a determined effort on the part of the United States Department of Agriculture to stop interstate traffic in so-called hog-cholera remedies which do not cure, prevent nor control this disease which has such an important bearing on the Nation's pork supply. The seized goods are now in custody of United States Marshals pending action under the Food and Drugs Act. The Government charges that this remedy will not prevent or cure hog cholera, as claimed on the labels of the seized products.

The Bureau of Animal Industry, through its veterinarians and experts in animal diseases, is coöperating actively with the Bureau of Chemistry in this campaign to control interstate traffic in fraudulent stock remedies.

ABSTRACTS OF PAPERS READ BEFORE THE AMERICAN PROCTOLOGIC SOCIETY

Nineteenth Annual Meeting, New York June 4 and 5, 1917

ORIGINAL RESEARCH WORK ON PRURITUS ANI

DWIGHT H. MURRAY, M.D. Syracuse, N. Y.

Murray said that he did not feel it necessary to continue to report the work in as great detail as in past years, because so many men in the profession, over such a wide area, were uniformly reporting a confirmation of his claims for the ætiology being *streptococcus fecalis*.

He said that he is working with Parke, Davis & Co. for the perfection of a standard stock vaccin that can be used by any one without the trouble to make cultures. He has used some of this stock of polyvalent strain from eight successfully treated patients, and the patients on whom it was used seemed to improve. He has used it only one month, therefore full judgment must be suspended until it has had a longer trial.

During the past year he found the patients all getting worse at about the same time and finally found that a laboratory worker had been deceiving him as to the strength and kind of vaccin; any kind of bacteria were used and few, if any, *streptococcus fecalis*. The laboratory worker resigned shortly after this, and on getting the work in the hands of a proper man all went well again.

Dr. Murray reported that the work of the past year had still more strongly proven the correctness of the bacterial (*streptococcus fecalis*) infection theory as the ætiology. His conclusions of the work are:

First: Conclusions of former years are confirmed and most of them are strengthened by experience of the past year.

Second: The troubles I have had with the laboratory worker, as shown herein, give proof that the benefit received by patients, following the use of *streptococcus fecalis* vaccin, is not a coincidence.

Third: Increasing proof that if rectal pathology is present with streptococcic infection of the anal skin, an operation will not cure the pruritus ani.

Fourth: Increasing proof that if rectal pathology is present without a streptococcus infection of the anal skin, an operation will cure the pruritus ani.

Fifth: Continued proof that there may be complicating infections of the anal skin, in pruritus ani, by staphylococcus or *B. coli*.

Sixth: Having published six years of research work, taking into account the report of physicians in this country and abroad who have confirmed his findings as to the skin infection, he feels justified in now claiming that the ætiology of pruritus ani is a skin infection and that the *streptococcus fecalis* is the usual bacterium.

NEO-PROCTOLOGY. A GLIMPSE INTO THE FUTURE

By JEROME MORLEY LYNCH, M.D., F.A.C.S., New York

We cannot claim for proctology that it is a new field of effort. It was practised centuries ago. In early records are described the cutting of a fistula and the ligature operation for hæmorrhoids. While, therefore, technic offers no novelties, physiologic surgery affords a most promising field for the further development of proctology.

The observations of the ancients were remarkably accurate, and, considering the limited amount of detailed knowledge at their command, are as wonderful examples of the power of human induction as many of the best conclusions of the modern day. Consider, for example, their decision that a hæmorrhoidal flux was in some cases to be regarded as beneficent. Whether or not the cause was known, as we understand it today, to be hepatic cirrhosis or right heart engorgement, still, for all, the observation is based upon as sound philosophy as could possibly be adduced today.

It is well for us, in the occasional mental stock-taking (which is periodically forced upon us) to bear in mind that the tendency of modern scientific instruments of precision, together with all the wonderful array of laboratory

tests, while of indisputable value, are in a certain sense of greater value to the patient than to the physician; for they certainly tend to take from the latter the necessity for that keenness of perception and correlative interpretation of symptoms, which was the distinguishing characteristic of the earlier physicians whose chief reliance was their own mental activity.

TUMOR OF THE BLADDER

Tumors of the bladder may, for all practical purposes, be classified as:

1. Benign
2. Malignant
3. Those which were in the beginning benign and have later undergone malignant degeneration.

The most frequently encountered of the benign tumors are the single papillomata, which may be single but are frequently multiple if the condition has been present for some time.

Of the malignant group, carcinomata most often occur, while in the group of benign tumors which have become malignant it is thought that many of these have been malignant from the beginning.

The benign occur most often in young people, while cancer and malignant papillomata are observed in the old. The favorite location for all classes of tumor seems to be the posterior lateral wall.

The earliest symptom is an intermittent hæmaturia, painless in type and usually not associated with frequency. After the condition has become well established, residual urine with resultant cystitis, painful spasm, tenesmus, constant desire to empty the bladder occurs, and then the bleeding becomes continuous, and clots are passed. The diagnosis of bladder tumor is best made by cystoscopy, which should be done in every case of hæmaturia.

Fulguration with the Oudin current and excision are the two methods of procedure in benign. Fulguration is contraindicated in cases where the bladder is intolerant to instruments, where the bleeding is so profuse that the field of operation is obscure, where the tumor cannot be reached with the wire, and where there exists a general papillomatosis.

Excision is the better procedure in the large solitary papillomata, especially if they be easily accessible. Malignant growths are best treated by excision where possible. In the cases of extensive involvement of the bladder, radium and subsequent fulguration seem to offer the most for these inoperable cases at the present time. Suprapubic cystostomy in the final stages of cancer relieves the straining and tenesmus due to bleeding and retention of clots, and allows the patient to pass his few remaining months of life in comparative comfort. — *Henry H. Morton, M.D., Medical Times, December, 1917.*

NOTE: Personal and General Items are on p. 14, advertising section



BASE HOSPITAL No. 44 (Massachusetts Homœopathic Hospital)



BASE HOSPITAL No. 44 (Massach



chusetts Homœopathic Hospital)

THE NEW ENGLAND MEDICAL GAZETTE

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No. 6

ORIGINAL COMMUNICATIONS

THE TREATMENT OF PROCIDENTIA UTERI*

GEORGE R. SOUTHWICK, M.D., F.A.C.S., Boston, Mass. Professor of
Gynæcology, Boston University School of Medicine.

The term *procidentia uteri* is used here to mean the protrusion of not less than half of the uterus from the orifice of the vagina.

Nature has protected the uterus in a wonderful manner from the strain of the upright position of the body. The axis of the pelvic cavity, which corresponds closely to the axis of the uterus in a normal position, meets the axis of the body at an angle of nearly 60 degrees, *i. e.*, the pressure from above does not fall directly on the pelvic contents but obliquely on the fundus of the uterus, tilting it forward rather than downward.

The perpendicular plane of the anterior margin of the promontory of the sacrum passes approximately an inch and a half behind that of the sub-pubic angle. This narrow space of an inch and a half under normal conditions and with a strong abdominal wall is the only space which allows abdominal pressure to be transmitted in a perpendicular direction to the uterus. In other words, under normal conditions only a small part of the normal pressure from the abdomen reaches the pelvic organs, and this is easily balanced by the counter-pressure of the pelvic floor and the transverse, elastic diaphragm of broad ligaments across the pelvis, stayed by planes and cords of fascial attachments.

The value of support of the uterus from below compared with the effect of abdominal pressure on the uterus from above suggests principles of treatment. Procidentia is very rare if there is complete laceration of the recto-vaginal septum, unless there is also enteroptosis and relaxation of the abdominal wall, or unusual

*Read before the Massachusetts Surgical and Gynæcological Society, May 15, 1918.

strain downward through the pelvic brim. On the other hand, enteroptosis, relaxed abdominal wall, or constriction of the abdomen increasing the pressure on the pelvic organs, are commonly associated with procidentia in the presence of only a second degree laceration of the perineum.

The tendency has been to emphasize the importance of vaginal repair to the neglect of abdominal support and the relief of pressure on the uterus from above. The most skillful work of the surgeon may be seriously impaired if careful attention is not given to protection of the pelvic contents from downward pressure. Women often honestly believe their corsets are loose and clothing properly adjusted when, as a matter of fact, no support is given to the lower part of the abdominal wall. To determine the facts in the case, the patient must be examined carefully and without loosening any of her clothing.

The principle of support is to draw in the abdomen between the umbilicus and pubis and allow free expansion of the abdominal wall above the umbilicus. This is accomplished by a belt or corset or a combination of both. The adjustment is far more difficult than is commonly thought, and no one belt or corset fits all cases. The fashionable corsétière is more apt to aim at a trim figure and a woman more likely to think of a certain gown she wishes to wear than to consider the health requirements of the case.

The treatment of procidentia is surgical rather than medical, and determined by the age and physical condition of the patient. The tight belly-band or dress on a crying, constipated child may cause procidentia. Removal of these causes cures the case.

Procidentia is rare in adult women who have not been pregnant, also in child-bearing women who do not have relaxed abdominal walls. Three cases in virgin women have been in my care the past year; two of them were waitresses.

A congenitally deep pouch of Douglas behind and below the cervix, and the weight of small intestines in it, may pull down the uterus in women, and tends to produce prolapse of the rectum in men. It is an important factor in causing procidentia in childless women, and the obliteration of this peritoneal pouch must be considered in operating on these cases.

The stretching of the pelvic fascia and perineum does about as much injury as a laceration of these structures. The fascia does not regain its supporting value by removing downward pressure any more than overstretched broad and round ligaments in old uterine displacements recover by supporting the uterus with a pessary. The entire pelvic floor needs tightening up along the usual lines of surgical repair in addition to the operation selected for securing the fundus of the uterus at its proper level in the abdominal cavity.

Operations during the child-bearing period should not interfere with that function. The vagina should not be made as small or the perineum as long and large as after the climacteric period.

A cystocele should be removed. Even a small projecting transverse fold of the anterior vaginal wall remaining after operation often increases and becomes so disagreeable to the patient that she will not feel satisfied with the result of the operation.

Baldy's method of shortening the round ligaments by drawing a loop of each through the broad ligaments under the Fallopian tubes and sewing them high up on the body of the uterus has given good results, especially when supplemented by a light suspension of the uterus, high enough to raise the cervix from the pelvic floor. This suspension stretches out or gives way in time, but it gives time enough for the loops of the round ligaments to become firmly attached to the uterus, otherwise the adhesions may not be strong enough and may give way, resulting in partial failure of the operation.

Most cases of procidentia occur in the post-climacteric period of life, and provided these patients are good surgical risks, various types of operation are at the surgeon's command; from these he may choose the one best suited for the case in hand.

Hysterectomy is easily performed, but it is difficult to fix the vaginal vault in such a way that it will not prolapse as a vaginal enterocele, a condition far more difficult to repair than the original procidentia. The excision of the uterus removes, furthermore, a most useful means of taking up the slack of the pelvic floor and ligaments, which in itself is a wonderful relief to the patient.

Opening the vaginal fornix, ante-verting the uterus and sewing it under the bladder beneath the anterior vaginal wall lifts up the bladder to advantage. This method, however, is not advisable unless the uterus is small, and, furthermore, the danger of injuring the ureters during this operation must be considered.

In all cases where conditions permit, the repair of the stretched pelvic floor must be most thorough, and amputation of the cervix is often necessary. The fascial attachments should be tightened up as high as the great sacro-sciatic ligaments. The mucous membrane should be raised from the posterior vaginal wall and the sutures inserted under it high up and so placed as to shorten the sling of the pubo-rectalis muscles and to raise the tissues, including rectocele if present, upwards and backwards. Chromicised No. 0 catgut in two large loops with one knot diminishes the number of knots under the mucosa and serves the purpose admirably. The excess of mucous membrane is cut away and the edges united with a continuous chromicised No. 0 catgut suture. Efficient sutures are placed above the plane of the vaginal orifice. Suturing tissue outside of this plane does no good and is annoying to the patient,

as it obstructs free discharge of urine from the vulva. Narrowing the vagina by cutting out lateral V-shaped pieces of mucous membrane or by deep suturing after the old Emmet method fails to give the excellent remote results obtained with the modern method, although it looks pretty at the time of operation.

There are two satisfactory ways of permanently fixing the *corpus uteri*.

The first method, that of Murphy, is very efficient when there is much relaxation of the abdominal walls and unusual strain from various causes on the attachment of the uterus. The operation consists essentially in dividing the uterus in the median line down to the internal os, removing most of the uterine muscles and after the two halves are turned over, like the flukes of an anchor, sewing them on top of the fascia of the recti muscles. There is apt to be considerable ecchymosis in the abdominal wall, but it gradually disappears.

The second method of operating consists in drawing the uterus up into the abdominal incision far enough to take up the slack of the utero-sacral ligaments and pouch of Douglas. The broad ligaments are divided a short distance from the uterus on each side about two-thirds of the way from the *fundus uteri* to the internal os. The ligatures on these stumps are used to attach the stumps to the abdominal wall. This takes up slack in the broad ligaments, brings them forward, and gives them greater supporting value. The uterus is then secured in the abdominal wall and the fundus of the uterus sewn into the abdominal wound on top of the fascia. This operation can be done quickly with very little manipulation of the abdominal contents. There are many cases, not good surgical risks for the combined vaginal and abdominal operations, who stand this operation quite well and are helped greatly by it. Women who are far from well, but who have a reasonable expectation of ten years of life, should not be allowed to spend those years in needless suffering.

There remain for consideration those women too feeble for any operation or those suffering from organic disease which forbids operation. Palliative treatment of uterine procidentia is not satisfactory, but some cases are benefited by local astringents, by relief of constipation, or by some form of vaginal support aided by external support. The real benefit in these cases must come from the removal of abdominal pressure. This requires much care, patience, and nicety of adjustment; far more than is usually given to the fitting of either corset or belt.

The results of operative treatment of *procidentia uteri*, as outlined, are very satisfactory. Recurrence, even to a small degree, is almost unknown if patients use a reasonable amount of care after the operation.

CHOREA *

ERNEST M. JORDAN, M.D., Boston

In these brief remarks no attempt is made to discuss chorea completely. The intention is merely that of mentioning some common errors into which we easily fall in the recognition of this disease.

True chorea is essentially a disease of the first two decades of life and while, doubtless, it may appear later, we must be suspicious of choreic conditions appearing primarily after this age.

The disease may seem in more or less intimate association with the various infectious diseases, and the author is one of those who believe that the relationship between "rheumatism" and chorea is particularly close. Seemingly, chorea should be classed as one of a family group including acute infectious polyarthritis, endocarditis, peri-carditis, rheumatic nodules, possibly erythema multiforme and erythema nodosum. Thus inevitably we must believe that infection is more or less a feature in very many cases of chorea.

Another factor to be remembered is emotional stress: fright, worry, mental trouble, and particularly the strain of education. In the management of chorea one does well to remember these great factors in its etiology. To forget any one of them may lead to diagnostic error.

Functional and organic diseases of the heart are very frequent in chorea. Probably few diseases are more often associated with actual cardiac lesions. Here again no attempt is made to cover that large field of differentiation between functional and organic conditions of the heart. One may remember that all murmurs definitely recognized as presystolic or diastolic denote organic disease of the heart. One may also remember Osler's dictum that the evidence of the eye and hand are more trustworthy than those of the ears when the murmur is systolic in time, and that if the apex beat is in the normal situation and cardiac dullness not increased, then valvular disease probably does not exist.

Given a case of chorea with a definite organic heart lesion one is faced with the necessity of distinguishing fresh endocarditis, which may cause us much trouble and anxiety, from sclerosis of the valves due to former endocardial inflammation. One who treats all of his cases in bed until the situation is clear will act wisely.

A very common error is that of failing to distinguish chorea from the motor restlessness of choreic or athetoid type which is symptomatic of organic cerebral paralysis of childhood. This

*Read before the Boston District of the Massachusetts Homœopathic Medical Society, May, 1918.

difficulty will not arise if the motor unrest is based upon a persisting infantile cerebral paralysis, hemi-plegic, para-plegic, or di-plegic, but in the occasional case the paralytic symptoms largely disappear and the motor unrest in such a case is very likely to pass as chorea unless the examination is careful and detailed.

Again one should remember that true chorea is not characterized by the repetition of particular movements, but rather by the number and variety of its irregular involuntary grimaces and muscular twitchings. This fact will enable one to recognize movements which are repeated in a stereotyped manner as something other than chorea, such as tics, habit spasms, and hysterical movements. This is an important point because while the movements truly choreic should promptly abate in due time, patients affected with tic or habit spasms may repeat their trick indefinitely.

We must not forget that chorea temporarily exerts a paralyzing influence on the affected individual. Otherwise we may take altogether too serious a view of some cases of apparently severe paralysis who are destined to full restoration of function. Here, however, one must not overlook cases of cerebral embolism, incidental to the endocarditis of chorea.

Chorea of pregnancy and chorea with definite insanity are justly held in ill repute. The following brief case reports are illustrative of the foregoing remarks:

1. Dorothy M., 16 years of age, living in central part of state, was brought by her father early in April for diagnosis and prognosis. The history is essentially negative except for the fact of her premature birth, whooping cough at 8 months, and measles at the third year.

The present complaint was one of difficulty in the use of her legs, which were stiff and spastic; she was unable to stand alone; always kept her knees firmly adducted and could walk if sufficiently supported, advancing upon the toes, which clung obstinately to the floor. The patient had great difficulty in using the hands because of persistent motor unrest having a superficial resemblance to choreic movements. On the basis of this motor restlessness in the upper extremities this diseased condition had been considered chorea and treated with Fowler's solution. The case was easily and plainly one of bilateral infantile cerebral paralysis.

2. Helen S., aged ten years, living in Dorchester, was brought by her father, April 2, because of weakness in the left leg of a few weeks' duration. Still more recently the left hand had become very weak and clumsy. This child had a definite hemiplegic gait, with toe drag and scraping of the foot along the floor. She had been pale and fidgety for several months but had done both her school work and her music lessons well, although highly censured by her school teacher for nervousness and inattention. Choreic movements were in evidence to a very trifling degree on careful watching. Nevertheless, because of a hope in the mind of the examiner that the hemiplegia though definite was merely an instance of paralytic chorea, a perfectly good prognosis was given in the presence of the child, although the father was privately told of other possibilities. The hope and the good prognosis were entirely justified by prompt and decided improvement with rest in bed.

496 Commonwealth Ave.

THE TRANSMISSION OF CONTAGIOUS DISEASES *

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The theory that contagious diseases are transmitted by air-borne infection should be entirely abandoned. According to this theory the organisms causing these diseases were capable of remaining suspended in the atmosphere and were not only flying about the room or ward in which the patient was confined but could be wafted through windows, doors, keyholes, cracks, etc., to reach the outer world.

To prevent such egress it was common practice to hang a sheet soaked in Platt's chlorid over the door of the sickroom. The attending physician or nurse, unaware of the important rôle played in the spread of the disease in question by contact infection, were often instrumental as carriers of the disease. The physician entered the sickroom, examined the patient, and then, thoughtlessly, took with his infected hand his watch from his pocket to count the pulse, or a notebook to enter a memorandum, or the thermometer, handkerchief, or stethoscope; or perhaps smoothed his hair or scratched his head or searched his bag for prescription blank, medicine case, or other article; and after completing his visit he would perhaps even forget to wash his hands before going to another patient. In other words, no adequate precautions were usually taken to prevent rapid spread of the contagion.

At present it is recognized that communicable diseases are transmitted almost wholly by direct or indirect contact infection. The only air-borne infection that is possible is the so-called droplet infection which may occur particularly in measles and pertussis and which depends upon the propulsion into the air of minute droplets of germ-laden saliva by coughing or sneezing. These droplets, however, fall rapidly to the ground and are, therefore, rarely carried more than a few feet from the patient.

The principle of contact infection governs the present management of contagious cases in the Haynes Memorial and in other modern hospitals. Whether the infection is a severe one such as scarlet fever or as mild as rubella; whether it is one as highly contagious as rubeola or one that is less readily transmitted as pneumonia or typhoid; whether the infecting organism is known or unknown, we feel that the mode of transmission is precisely the same, and our technic of prevention is, therefore, also the same.

* Read before the Boston District of the Massachusetts Homœopathic Medical Society, May, 1918.

Proof of the efficacy of isolation and management of contagious diseases as based upon the principle of contact infection is readily adduced from our experience at the West Department during the four years that the present technic has been carried out. On our so-called isolation floor, for example, there are nearly always four or five different contagious diseases at the same time, and I remember that on one day there were nine of them: scarlet fever, diphtheria, parotitis, measles, German measles, erysipelas, varicella, acute anterior poliomyelitis, and epidemic cerebro-spinal meningitis. To be sure, this floor is divided by partitions into compartments or cubicals, but the same nurses and physicians care for all the cases on the floor.

Fumigation of rooms or mattresses is not done in our institution. Often a case of scarlet fever, for instance, is taken out of a cubical and another patient suffering from another infection is put there as soon as certain necessary changes are made; these consist chiefly in the replacement of bed linen.

The safety with which contagious diseases may be handled if proper precaution against contact infection is observed is further exemplified by the following experience: The west side of the hospital consists of two floors, both of which until recently were occupied by cases of scarlet fever. In December last we were requested by the Navy to care for cases of mumps, and one of the scarlet fever floors was the only available space to accommodate them. On December 26 all the scarlet fever patients were removed from this floor, and on December 31, five days later, cases of parotitis were admitted. The precautions taken to prevent transmission of scarlet fever to these naval patients consisted in washing floors, tables, bedsteads, etc., and in covering beds with clean linen. Four hundred and ninety cases of mumps have been treated on this floor since last December while the floor beneath it was still occupied by cases with scarlet fever, yet no transmission of disease from one floor to the other took place.

Very recently it became necessary to change the mumps ward to an isolation ward in which, as stated previously, many different types of disease are present at one time. Again, washing of floors and furniture and change of bed linen were the only precautions taken to eradicate all traces of mumps.

Many other instances could be cited to prove the contention that direct or indirect contact infection is the mode of transmission of contagious diseases, and that such transmission from the sick to the healthy, or cross infection between two diseases, is preventable by observation of technical details based upon this principle.

The technic is very simple and essentially similar to that observed in operating amphitheatres, where surgeons and nurses wearing sterile gloves and gowns carefully refrain from touching

anything but sterile materials: they do not search the pockets for instruments or scratch their heads with their sterile hands. Similarly, in our contagious wards, we do not, after having examined a case of diphtheria and being contaminated with that contagion, go to a case of scarlet fever without first removing contaminated gowns and washing our hands; and while we are contaminated we are careful to avoid touching anything except those things that also are tainted with the same virus. Constant alertness is the price of success.

A special course in contagious technic is given our pupil nurses during their stay at the West Department, and our fortunate freedom from cross-infection is evidence of the care exercised by them.

A very troublesome thing which makes management of contagious diseases somewhat difficult is the variability of incubation period, not only in different diseases but also in the same disease. Scarlet fever, for instance, may have an incubation period of twenty-four hours in one individual and as long as twenty days in another one. A person may be exposed to scarlet fever and varicella at the same time and may show symptoms of scarlet fever in three days and of chicken-pox in three weeks.

Another very disturbing element is the possible synchronous coexistence of two or even more contagious diseases in one and the same patient. Thus, it is not rare to meet a combination of measles and scarlet fever or of diphtheria and varicella, and, in fact, any one of a large variety of groupings.

What steps should be taken to prevent the appearance and spread of contagious infections in general children's wards? A knowledge of the mode of transmission and of the technic necessary to prevent such transmission, an understanding of the variability of the incubation period in different diseases and in the same disease and of the approximate limits of these variations, and recognition of the possibility of simultaneous presence of more than one contagious disease in the same patient, should suggest measures that are essential for averting such an unfortunate occurrence. The following points may be emphasized:

First, a children's hospital or department must have an admitting room where thorough physical examinations of entering patients are made by a physician adequately trained to recognize valuable cardinal onset symptoms of all contagious diseases; second, the wards should be small, preferably divided into cubicals, and there should be several isolation or detention rooms for suspects; third, the head nurse should have sufficient training and experience in contagious diseases to be able to recognize suggestive symptoms, and the nursing force should have instruction in the care and management of contagious cases. It may also be pointed

out in this connection that the family history as given by the patient or his relatives is not always to be relied upon, and also that one individual may contract any contagious disease more than once. Although it may be impossible to prevent entirely the occasional occurrence of one or another of these diseases in a general children's ward, yet where the outlined prophylactic program is followed such occurrence will unquestionably be very infrequent.

My experience with contagious cases sent in by practising physicians convinces me that every medical practitioner should have sufficient training in the diagnosis of these diseases to be able to recognize at least typical cases by the clinical symptoms alone, and he should not be dependent merely upon laboratory findings. These are very helpful but not always dependable. I am sure that many diphtheria patients, for instance, are allowed to die because a negative culture report is believed to rule out diphtheria and, therefore, antitoxin is not given. The important position held by contagious diseases in the routine work of practising physicians would seem to indicate the advisability of providing at least six months ante- or post-graduate practical instruction in a contagious hospital for all students of medicine.

PATHOLOGY AND PROGNOSIS OF TUBERCULOSIS

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PATHOLOGY

The morbid anatomy of tuberculosis, including its serologic and cytologic considerations, is so intimately concerned in the course and termination of this disease that it is almost impossible to discuss the prognosis of tuberculosis without at the same time considering its pathology.

In order that the physician may give the tuberculous patient the best advice and treatment, it is necessary for him to bear in mind the resistance of the patient as evidenced by the mode of tubercle formation and its eventual fate. This depends upon the virulence of the infecting organisms as well as their number, upon the length of time they are in contact with the tissues, and upon the former health and habits of the host. Furthermore, it is necessary to determine immunity to tuberculosis by serologic studies and to take into consideration previous treatment of the case, especially as regards exercise and rest. Serologic tests prove that there are demonstrable substances in the vital fluids of the tuberculous that do not exist in the non-tuberculous.

To the student of tuberculosis its pathology is most interesting. Too often, in the past, physicians have looked upon tuberculosis as an inevitably fatal disease and one in which pathologic changes

were for the most part ulcerative. If, however, we treat the patient early and right, and if we realize that in the histogenesis of the tubercle, nature reveals her method of attacking the disease, then we have reason for the most optimistic outlook in the majority of cases of tuberculosis.

Some races have developed racial immunity as the result of years of contact with the disease, while other races possess practically no immunity because they may be looked upon as virgin soil.

The infection atrium has been conclusively shown to have been in the lymph nodes in many instances, although it may have been in other instances by way of wounds or through the unbroken epidermis. Corbett¹ has shown that in the majority of cases of pulmonary tuberculosis infection takes place through the bronchial lymphatics, whence it eventually extends to the lungs. In a smaller number of cases the mesenteric nodes were the portal of entry. In a few cases the tonsils and cervical nodes have been shown to have been the probable route of infection that caused apical tuberculosis.

The body normally offers resistance to infection by the reflex acts of coughing and sneezing, by interposed barriers of lymphatic structures, and by the normal anti-toxic and bactericidal action of vital fluids. Furthermore, the resistance of an individual depends upon his race, age, habits, environment, general make-up, and previous diseases.

Resistance to tuberculosis, mechanical, anti-toxic, and bactericidal, is cellular, and the fate of the tubercle depends upon the health of the cells, collectively and individually. Sooner or later, after the tubercle bacilli enter the tissues, a tubercle is formed around them, made up of cells resembling epithelial tissue cells, and therefore, called epithelioid cells. These cells form a mechanical barrier, as has been shown by Krause.² There may or may not be a centrally located giant cell in the tubercle. Peripheral to the layer of epithelioid cells is a reinforcement of leukocytes and red blood cells, the number of leukocytes depending probably upon the virulence of the infection. This early stage of tubercle formation is the inflammatory stage. It is accompanied by exudation of moisture in adjacent alveoli, and it is the passage of air over or through this moisture that causes râles.

The inflammatory stage persists either until there is more or less complete encapsulation of the bacilli and their metabolic products (tuberculin) by the fixed and wandering cells and immunity has been established or until ulceration takes place. Rest during the inflammatory period, providing the cellular resistance is near

¹ Corbett: *The causes of tuberculosis.*

² Krause: *The nature of resistance in tuberculosis.* Amer. Rev. of Tuberculosis, Vol. 1, No. 2.

normal and also providing the infective agent is not too virulent, will cause slowing up of the centripetal and centrifugal circulation of the tubercle and consequent diminution of the amount of tuberculin thrown into the general circulation. Rest will, therefore, to a great extent determine whether or not inflammation will be followed by ulceration and consequent fibrosis.

In cases which are rapidly progressive the inflammatory stage eventuates in cheesy or caseation necrosis, so called on account of the consistency of the resulting dead material. This necrosis may terminate favorably by calcification of the caseated area and peripheral fibrosis, or it may terminate unfavorably by liquefaction of the necrosed tissue, by invasion with a secondary infection, and finally abscess formation.

It has been remarked by the late John B. Murphy that tubercle bacilli alone would not cause ulceration but that a mixed infection is necessary for pus formation. More recently, however, some authorities contend that the tubercle bacillus itself is a pyogenic organism.

Fibrosis may appear at all stages of tubercle development; thus, some cases may be fibro-inflammatory, others fibro-ulcerative, and still others may show calcified areas surrounded by fibrous capsules. The amount of fibrosis depends upon the amount of ulceration or inflammation. In some cases there is so much fibrosis that the chest wall shows a great degree of contraction and immobility. Many times cavities of large size contract so markedly that eventually all cavitation signs usually discerned by stethoscopy are wanting, and it is in these cases that the deformity of the chest wall is most marked.

It is often possible to demonstrate all stages of the tubercle in a single lobe: inflammation, caseation, liquefaction, fibrosis, and calcification. There may also be considerable and varied degeneration in the cells surrounding the infected area, and in fact the toxins of *B. tuberculosis*, circulating through the general system, may cause cellular degeneration in any or all organs of the entire body. One evidence of this fact is the relatively greater frequency of albuminuria in tuberculous as compared with non-tuberculous cases. The condition of the skin and the nervous systems in tuberculous patients is another proof of existing general toxæmia.

The tubercles may be scattered or confluent, thereby causing gross anatomical changes of varying degree and character, according to whether the infective organisms were scattered or grouped.

Lesions have been demonstrated in nearly every part of the body, with the usual characteristics of the tubercle in all of its stages. Laryngeal and intestinal infections are the most frequent (after pulmonary lesions), about ten per cent. of the former and thirty to ninety per cent. of the latter having been reported. Intestinal

lesions have in most instances been secondary to pulmonary involvement.

PROGNOSIS

Dr. Charles Minor is credited with the statement that no matter what you tell a patient about the final outcome of his disease, it is sure to be the opposite. Very often, however, quite definite prediction may be ventured concerning the course and ultimate issue of tuberculous infection in a given individual; but it is impossible to make any but very general statements as to the prognosis of various types of tuberculosis as a whole.

The former habits and life of a patient are of prognostic importance. An individual who has led an indoor life will respond more quickly to treatment than will a person who has contracted the disease in the open.

A persistently positive uro-chromogen test in the urine and persistently low blood pressure have been considered bad omens. I have found that prolonged elevation of temperature that is not influenced by rest, and also a persistently high pulse rate are, as a rule, signs of a poor prognosis.

Trudeau found that his tuberculin-treated patients did a little better than those not treated by this remedy. Barnes³ found that those treated by Friedmann's vaccin did not do as well as those not treated. Heise⁴ shows that patients with bacteriologically positive and blood-streaked sputa did not do as well as others without these symptoms. Heart, liver, and kidney diseases complicating tuberculosis render the prognosis more hazardous.

Taking everything into consideration it seems that from the pathological standpoint alone we are justified in assuring our tuberculous patients that tuberculosis is less to be feared than practically any other chronic disease, provided we can make an early diagnosis and institute early treatment. Furthermore, it is not necessarily the advanced case that needs the most rest; in fact, the opposite is often the rule, for the reason that in many instances nature has developed a mechanical barrier around infected areas and has established cellular immunity in advanced cases, whereas the incipient cases have not been so favored. The amount of rest taken by a given patient decides as a rule the eventual course and termination of his infection.

³ Barnes: *End results of Friedmann's vaccin.* Jour. Am. Med. Ass., 1918, lxx, 909.

⁴ Heise: *Amer. Rev. of Tuberculosis.* Vol. 1, No. 5.

URANALYSIS IN PREGNANCY*

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A critical review of the literature on uranalysis in pregnancy shows that such analysis is usually undertaken for one of three purposes: as an aid to the positive diagnosis of pregnancy; as a prophylactic measure in the hygiene of pregnancy; or as a laboratory aid to the clinical observation of the obstetrician in making his diagnosis and prognosis.

The first-mentioned purpose deserves but brief consideration in view of lack of practical positive results. Most methods have sought the determination of pregnancy by utilizing urinary enzymes called forth by the development of the placenta. The Kiutsi-Malone test may be taken as an example. Careful trials by Cutter and Morse gave some negative results when pregnancy was present, and several positive results with male urine. These tests must, therefore, be placed where Peiper, Plant, and Jobling and Peterson placed Abderhalden's ninhydrin blood test for pregnancy: in the realm of non-specificity.

The second purpose, that of urinary analysis as a prophylactic measure in pregnancy, cannot be too vigorously urged. Twenty-four hour specimens of urine for analysis every month until the seventh month and every week thereafter is set as a minimum by Kellog. The simple periodic examination of the urine for specific gravity, albumin, sugar, and casts, however, no longer meets the exacting demands of present-day diagnostic methods.

INDOXYL AND SKATOXYL

It has been demonstrated that faulty intestinal metabolism is often the cause of a distinct train of symptoms occurring with especial facility in pregnancy. Such auto-intoxication frequently seems to be the forerunner of the toxæmia of pregnancy. The value of laboratory tests in this condition lies in the recognition of a relative excess of ethereal sulphates in the urine, indoxyl sulphate and skatoxyl sulphate being the varieties most frequently present in excess. One of the simpler tests for this excess should form a part of every urinary examination in pregnancy, or it may be advisable to perform the more elaborate procedure of quantitative estimation of ethereal sulphates, of inorganic sulphate, and of neutral sulphate. In interpreting the results it is well to bear in mind the normal changes which occur in the transfer from a normal to a low protein diet, because of the low protein diets recommended in pregnancy. Folin's figures show that the proportion of ethereal

* One of the theses submitted by third-year students of Boston University School of Medicine, as part of the course in Urinary Sediments and Hæmatology.

sulphates rise on a low protein diet, though the absolute amount diminishes. The relative rise, however, is greatest in the neutral sulphur, which is on a low protein diet increased in absolute amounts as well, and hence, probably corresponds to endogenous wear and tear.

TABLE I. Comparison of sulphur excretion on normal and low protein diets.

	Normal protein diet		Reduced protein diet.	
	Grams	Percentage	Grams	Percentage
Total SO ₃	3.64		.76	
Inorganic SO ₃	3.27	90	.46	60.5
Ethereal SO ₃	.19	5.2	.10	13.2
Neutral SO ₃	.18	4.8	.20	26.3

Edsall and Wile, in an investigation including 64 pregnant women, showed the importance of testing for decomposition product; though they found that urobilinuria, so common in pregnancy, showed no regular relation to an excess of decomposition products.

ALBUMIN

There seems to be an intimate relation between abnormal intestinal decomposition processes and kidney irritation, and recent investigations have shown that approximately as high as fifty per cent. pregnant women show albumin in the urine at some time during pregnancy. Little found albumin in 48.8 per cent. of all cases examined and 46 per cent. of all catheter specimens.

TABLE II. Extracts from Little's tables.

A. Albumin and casts during pregnancy, labor, and the puerperium.

	715 cases of pregnancy.	560 cases of labor.	538 cases of puerperium.
Albumin	48.8%	62%	56%
Albumin and casts	10.1%	18%	11.5%

B. Albumin and casts in 100 consecutive cases of pregnancy, comparing catheterized and voided specimens.

	Catheterized	Voided
Albumin	46%	46%
Albumin and casts	14%	4%

These high figures are easily understood when the many causes of albuminuria operative in pregnancy, such as circulatory dis-

turbance, increased functional activity, faulty innervation, as well as actual pre-existing renal lesions, are taken into consideration. In addition, irritating excretory products are beginning to be recognized as important factors.

TOTAL URINE EXCRETION

The total quantity or volume of urine excreted during twenty-four hours, according to Mathews, may be expected to be rather higher than in cases of passive hyperæmia due to other causes. Analysis of the urine of one hundred women at the Sloane Maternity Hospital and of the urine of twenty-five of his own patients convinced him that the average was well over fifty ounces and that the specific gravity averaged about 1.013 in those who had not been urged to drink copiously. The color is rather pale or normal in uncomplicated cases.

GLYCOSURIA

Glycosuria in pregnant women has been extensively studied, as shown by the rather voluminous literature upon this subject. If the glycosuria can be proved to be transitory, it justifies no special consideration. Lactosuria is frequently a source of diagnostic error which careful laboratory investigation eliminates.

Diabetes mellitus takes much the same course in pregnant women as in normal women of the same age, and occasional severe exacerbations seem as common in one set of cases as in the other. If serious symptoms supervene and acetone bodies appear in the urine or if the output of sugar cannot be controlled by dietetic means, the condition should be considered alarming and pregnancy should be terminated. Most writers advocate this induction of premature labor, but Vinay and Kleinwächter are absolutely opposed to it.

Williams concluded that when pregnancy occurs in diabetic women or when diabetes becomes manifest during pregnancy, the condition is to be regarded as serious but not as alarming, as is frequently stated. As long as the percentage of sugar remains stationary or can be controlled by anti-diabetic measures, prognosis should be regarded as favorable, and there should be no thought of interfering with pregnancy.

EXCRETION OF NITROGEN

The urea content of urine seems to be the most variable of the nitrogen constituents. The retention or storage of nitrogen begins according to Hoffström as early as the third month, but Wilson concludes that in the perfectly normal woman storage of nitrogen begins at a much earlier period, possibly from the very beginning of pregnancy, and that it continues throughout the entire duration of

gestation. This storage is greatly in excess of the needs of the developing ovum, so that, apart from the amount needed for the hypertrophy and development of the breasts and genitalia, a large proportion of the stored nitrogen is added to the general maternal organism as "rest material," which is commonly entirely exhausted during the puerperium and the period of lactation.

TABLE III. Composite of Folin's, Hammarsten's, Ogden's, Yvon and Berlioz', and Abderhalden's figures for normal nitrogen partition in non-pregnant women.

Total Nitrogen	18 grams	Percentage
Urea Nitrogen	15.8 "	87.7
Ammonia Nitrogen	.5 "	2.8
Uric acid Nitrogen	.2 "	1.1
Creatinine Nitrogen	.6 "	3.4
Undetermined Nitrogen	.9 "	5

There is a relative increase in the percentage of urinary nitrogen excreted in the form of free amino acids, though not necessarily an absolute increase in this form of nitrogen elimination. Normally this is stated to be about one or one and one half per cent. of the total nitrogen in non-pregnant individuals (Van Slyke), whereas in normal pregnancy the average is approximately three per cent. of the total nitrogen.

Ammonia nitrogen, averaging about three per cent. in the normal individual on a normal diet, or according to Folin ten per cent. on a reduced protein diet, tends to become increased during the last week of pregnancy, although not at other times during normal gestation.

TABLE III. (After Edgar), showing differences of nitrogen excretion in toxic and non-toxic pregnancies.

Urinary constituents	Non-toxic pregnancy		Pregnancy with toxæmia	
	Grams	Percentage	Grams	Percentage
Total nitrogen	8.5		5.9	
Urea nitrogen		75		32.9
Ammonia Nitrogen		5.5		48
Uric acid nitrogen		2		
Creatinine		5.5		
Undetermined		12		28.5

Most discussions revert to a consideration of which element of faulty metabolism is most frequently found in the urine and whether the amount present is a true indicator of the degree of toxæmia it accompanies.

Ewing argues that an excess of the relative amounts of amino acids constitutes a guide to the severity of toxæmia. Edgar agrees with Williams, who looks upon an increase in the relative amount of ammonia as important, while others characterize acidosis as the guide. All, however, agree that these changes simply accompany the toxæmia. That their exact relation to this condition is not fully understood is indicated by the fact that amino acids may occur in much increased relative amounts in erysipelas, ammonia in diabetes, and acidosis in inanition, with but the slightest symptomatic resemblance to toxæmia of pregnancy.

But there is no question that in pregnancy low urea nitrogen, high ammonia, and high undetermined nitrogen output, together with exacerbations of clinical toxæmic symptoms, constitute a warning of impending disaster.

The blood condition back of the urinary findings is most suggestive. By newer methods of blood examination Folin has shown that normal persons carry about twenty-eight or at most thirty milligrams of urea per hundred cc. of blood. Among hospital inmates, however, higher standards prevail; findings of from thirty to forty milligrams being as common as those under thirty. Since the kidneys are the chief factors in the determination of the quantity of waste products carried in the blood, we must assume that at least one half of these hospital patients have damaged kidneys.

The pregnancy uranalyses of Little, previously cited, are in striking accord with these observations; but there is a marked difference between the high level of non-protein nitrogen in the blood of pregnant patients and the high level of other hospital patients. Folin's analysis of the blood of one hundred pregnant women at the Boston Lying-in Hospital showed few except the toxæmic ones giving thirty milligrams per hundred cc. blood. In striking contrast to this are the other hospital patients, and especially nephritics, who may go about and be hardly inconvenienced by as high as one hundred milligrams of urea nitrogen per hundred cc. of blood.

Practically without exception, the blood urea of normal pregnant women is smaller in amount than the blood urea of normal non-pregnant women. This fact at once suggests its possible utilization as a diagnostic test for pregnancy. Few pregnant women showed as high as nine milligrams of urea nitrogen per hundred cc. of blood. Whereas in other normal persons the blood urea is equal to fifty per cent. of the total non-protein

nitrogen, in normal pregnant women it is found to be only twenty to thirty-five per cent.

These low proportions of urea leave a higher proportion of amino acids and possibly peptids. It has not yet been proved whether this is a purposeful mechanism for providing a more constant and abundant supply of the kind of nitrogenous food needed by the growing foetus, or whether the pregnant organism is more susceptible than others to certain waste products, including urea. It may be that a combination of these factors is the true explanation; for it is reasonable to suppose that the pregnant organism might be more susceptible than others to these waste products, in self-defence keeping them to a low level, and yet at the same time providing a higher proportion of amino acids or similar products to be utilized by the foetus. This would still be consistent with the fact that the blood in toxæmic pregnancies may be abnormally rich in toxic products, even when the non-protein blood nitrogen is not high as compared with normal blood standards.

Until more extensive and confirmatory work has been done along this line, the clinician and obstetrician must rely largely upon uranalysis; and this should include, as indicated, careful study of the volume eliminated, specific gravity, sulphates, fatty acids, possible sugar, possible casts, amount of albumen, and the partition of nitrogen.

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EDITORIAL

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THE WAR AND MEDICAL SCIENCE

At the present time every one should be occupied to the greatest extent possible in winning the war. Nevertheless an occasional forward glance relative to its effects on our future activities may not be amiss. That a conflict of such magnitude will cause vast changes in the order of things is a trite remark, although it is not so easy to predict just what direction these changes will take. Even in the countries that have been involved longest in the struggle, outcroppings of re-creation frequently appear. It is well known that England has always developed the humanities more prominently than the sciences, and the technical man, whether theoretical or purely practical, often failed to receive due recognition, either social or governmental. But at the present time evidence is not lacking that the government, realizing more keenly than ever before the close connection between applied science and commerce, is preparing to give unlimited financial assistance to certain activities in order that they may be brought to a state of perfection second to none. Having such assistance, their development may proceed untrammelled, without being subject to the many obstructions that unsympathetic officials may stupidly place in its way.

And in our own country there is a budding renaissance regarding the educational policies of our great universities. Efforts to bring about changes for the better have originated in many cases among university officials, and among the professors themselves. The stand of Dr. Eliot in reference to the present policy of "stressing the humanities" is too well known to require comment. His contention embraces the idea that the study of the sciences from the standpoint of their integral relation to the objective world in

which we live is more conducive to an efficient handling of life problems than is a prolonged study of the classics. Whatever else comes out of these apparent awakenings it is most probable that to a greater extent than ever before the university will become a servant of the public, and that the public will not support institutions not rendering the highest service.

It is not to be doubted that progress in the field of medicine, which already has been so profoundly affected by the leavening influence of exact science, will be accelerated to a still greater degree. I do not refer especially to the obvious benefits occurring from specific advances such as Dakin's discovery of a new antiseptic or the great forward strides made in orthopedic surgery; but systems of medicine and theories of all kinds will be more subject to the acid test of exacting scientific criteria.

Particularly, institutions existing for the promulgation of certain ideas will be required to have a substantial basis for their beliefs. I do not mean to imply that any formal board of censors will sit in judgment upon such institutions. The changing influences at work are so multiform and so permeate the entire fabric of our activities that incompetency will be automatically retired. Of course, even then a vegetative existence may still be possible, but the influence of those leading it will be negligible, and eventually they will die the death of all things completely out of harmony with their environment.

I do not think that I am straining facts when I say that homœopathy, in common with other ideas, must measure up to advancing standards. Its adherents have always been frank in proclaiming its general therapeutic superiority, and it is claimed that such evidence has been overwhelming in some diseases, of which pneumonia is probably the most prominent. Despite the quantity of evidence that has accumulated in support of this contention, it is a question whether its quality will be of sufficient merit to satisfy an impartial observer. Candidates for admission to a medical school might be considered as one class of impartial observers, and the more scientific their preliminary training the more will they be inclined to demand scientific rather than impressionistic evidence. Even the laity are demanding more convincing evidence. The fact that they recover from a disease while taking a drug is no longer *conclusive* evidence to them of that drug's beneficent action.

Although the physicians who have seen pneumonia patients recover under the influence of bryonia may not need to be further convinced, yet their "say so" will no longer constitute sufficient evidence in these times when events are demanding a different quality of evidence for all values. Furthermore, the policy of inducting suggestive evidence from collateral sciences as adequate

proof in itself of "clinical laws" will continue to be less of a delusion as time goes on, and such practice will eventually be recognized for what it is, *viz.*, that of putting new wine into old bottles.

The path should be clear. Controlled investigation by competent persons conducted in institutions thoroughly equipped for the purpose will be a guide in assigning schools and theories to their proper places in the changing order of things. Either it will confirm them as being of actual value, or it will reject them in whole or in part; which result is to be desired by all who have any sincere regard for the truth.

RALPH R. MELLON.

SURGEON GENERAL GORGAS' OFFICIAL RECOGNITION OF THE AMERICAN INSTITUTE OF HOMŒOPATHY AS A NATIONAL ORGANIZATION

The following letter, addressed to the American Institute of Homœopathy and sent to the *Gazette* for republication and comment, is not merely a stirring appeal for additional enlistments in the Medical Reserve Corps, but at the same time shows that the deplorable spirit of medical sectarian feudalism is fortunately being replaced by one of good will and toleration.

WAR DEPARTMENT OFFICE OF THE SURGEON GENERAL, WASHINGTON

April 25, 1918.

From: The Surgeon General, U. S. Army.

To: The American Institute of Homœopathy, 22 East Washington St., Chicago, Ill.

Subject: Medical Reserve Corps.

1. The Surgeon General of the Army desires the coöperation of the American Institute of Homœopathy in securing additional enlistments to the Medical Reserve Corps and for keeping the numerical strength of the Corps up to the requirements of the service.

2. This will necessitate a close coöperation between the office of the Surgeon General and the officials of the American Institute of Homœopathy through the different State and County medical societies and the different organizations of the American Institute of Homœopathy.

3. The present needs of the service will require all of the officers of the Medical Reserve Corps who have received their commissions and who are ready for active service. The additional increase in the Army during the next few months will probably require the service of 5,000 physicians, who as yet have not made application for commission in the Medical Reserve Corps.

4. Under the present authorization for the Army, it is estimated that the Medical Reserve Corps will need a steady increase of about 2,500 applicants a year during the continuance of the war for the purpose of replacements due to casualties, resignations and discharges, and to provide a medical personnel for organs not at this time authorized. Under the present arrangement the Surgeon General is authorized to maintain a strength of 3,600 medical officers in the training camps for medical officers for the purpose of instruction.

5. It is earnestly desired that the interests of the civil communities be conserved as far as possible and that no enlistment in the Medical Reserve Corps be made that would work serious hardship upon any community, manufacturing concern or other civil activity by taking from such community, manufacturing concern or other civil activity physicians whose services are needed for the effi-

cient and competent care of the civil population or the employees of such concerns.

6. To this end the Department desires the closest coöperation and assistance of the American Institute of Homœopathy and its officers and allied organizations, believing that through these organizations and other similar organizations the additional increment to the Medical Reserve Corps can be most satisfactorily obtained and the necessary increment for replacements be secured without in any way depriving any community of physicians whose services are necessary to its welfare, and without depriving any manufacturing or other concern of its medical personnel if such personnel cannot be spared.

7. It is believed that by working through the Institute, similar organizations, subordinate bodies and State and County medical societies, the best possible results can be obtained and the needs of the service can be supplied with competent and efficient professional men to meet not only the present necessity of the service, but to supply its future needs in the way of officers for the Medical Reserve Corps.

8. In making this request of the American Institute of Homœopathy, I wish to say that many who have already volunteered their services have been members and followers of this school and that in the selection of medical officers there has been and will be no discrimination against such physicians.

WILLIAM C. GORGAS,
Surgeon General, U. S. Army.

The quota of the homœopathic profession toward the number of physicians needed is approximately 300 men and the annual increment about 150. As homœopathic organizations and individuals we should put forth special effort to do our part and show our loyalty to both country and profession by a generous response.

COMMISSIONER COPELAND

Dr. Royal S. Copeland, Dean of New York Homœopathic Medical College and Flower Hospital, New York, has been appointed Commissioner of Health of the City of New York by Mayor Hylan. Dean Copeland's administrative ability should prove of inestimable value to him in this new post of honor and responsibility. Crane, writing in the *New York Globe*, puts him in the "Schwab-Ryan-Pershing class," and we are sure that he will do creditable work "in his serious task of safeguarding the health of the great port of entry of the United States, the largest city in the world, and the world's greatest, most undigested mass of humanity."

A NEW MEDICAL JOURNAL

This issue of the GAZETTE contains a review of the first number of *The Journal of the Southern Homœopathic Medical Association*. It takes the place of the *Maryland Homœopathic Journal*, which was purchased by the association. In the editorial letter of introduction it is stated that "This magazine will be published in the interest of homœopathy generally, but . . . its main activity will be for homœopathy in the South. . . . One of our main efforts will be to bring more young people of the South to our homœopathic colleges for their medical education."

APPROVED HOMŒOPATHIC HOSPITALS FOR THE HOSPITAL INTERN YEAR

At the present time the following states are requiring, or have signified their intention to require, as a prerequisite to appear before the licensing boards in Medicine, one year internship in a hospital or hospitals which are qualified to give the necessary instruction required by either the law of the state, or what seems to be the equivalent thereto, the ruling of the licensing board:

<i>States</i>	<i>Time effective</i>
1. Pennsylvania,	1914
2. New Jersey,	1916
3. Rhode Island,	1918
4. North Dakota,	1918
5. Illinois,	1921
6. Michigan,	1922

The following institutions comply with the requirements and are thoroughly competent to furnish the required intern year. Service in these hospitals should be selected in preference to any other.

	<i>Number of interns</i>
1. Massachusetts Homœopathic Hospital, Boston, Mass.,	12
2. Metropolitan Hospital, New York,	31
3. Flower Hospital, New York,	12
4. Hahnemann Hospital, New York,	4
5. New York Hospital for Women (women interns only),	3
6. Cumberland Street Hospital, Brooklyn, N. Y.,	8
7. Albany Homœopathic Hospital, Albany, N. Y.,	4
8. Syracuse Homœopathic Hospital, Syracuse, N. Y.,	4
9. Rochester Homœopathic Hospital, Rochester, N. Y.,	4
10. Hahnemann Hospital, Rochester, N. Y.,	3
11. Buffalo Homœopathic Hospital, Buffalo, N. Y.,	3
12. West Jersey Homœopathic Hospital, Camden, N. J.,	2
13. Hahnemann Hospital, Philadelphia, Pa.,	8
14. Homœopathic Hospital, Pittsburgh, Pa.,	6
15. Hahnemann Hospital, Scranton, Pa.,	2
16. Crozer Hospital, Chester, Pa.,	1
17. Homœopathic Hospital, Reading, Pa.,	2
18. Wilmington Homœopathic Hospital, Wilmington, Del.,	1
19. National Homœopathic Hospital, Washington, D. C.,	2
20. Ohio State University Homœopathic Hospital, Columbus, Ohio,	2
21. Hahnemann Hospital, Chicago, Ill.,	6
22. Lee Hospital, Rochester, N. Y.,	
23. University of Iowa Homœopathic Hospital, Iowa City, Ia.,	3
24. Hahnemann Hospital, San Francisco, Cal.,	1
25. William McKinley Memorial Hospital, Trenton, N. J.,	2
26. Hospitals of the Women's Homœopathic Association, Philadelphia, Pa.,	4
27. Yonkers Homœopathic Hospital, Yonkers, N. Y.,	1
28. Grace Hospital, New Haven, Conn.,	
29. University of Michigan Homœopathic Hospital, Ann Arbor, Mich.,	4
30. Iowa Congregational Hospital, Des Moines, Iowa.,	1
31. Utica Homœopathic Hospital, Utica, N. Y.,	

(From report of W. A. Dewey, M.D., Secretary, Council on Medical Education of the American Institute of Homœopathy, printed in the Journal of the Institute.)

OFFICERS OF BASE HOSPITAL NO. 48

(Metropolitan Hospital, Blackwell's Island, New York)

Director — Major William Francis Honan (N. Y. Hom. Med. College), F. A. C. S.

Surgical Section

Chief — Major Arthur R. Grant (Columbia Univ.), F. A. C. S.

Capt. L. Evans Hetrick (Hahnemann of Philadelphia).

Capt. Robert V. White (Hahnemann of Philadelphia), F. A. C. S.

Capt. Harry C. Reynolds (N. Y. Hom. Med. College).

Lieut. Edward P. Clark (Hahnemann of Philadelphia).

Lieut. Karl S. Simpson (Hahnemann of Philadelphia).

Lieut. Alfred A. Richman (N. Y. Hom. Med. College).

Lieut. Harry E. VanderBogart (Hahnemann of Chicago).

Lieut. Blaine L. Ramsey (Hahnemann of Chicago).

Lieut. Everett A. Tyler (Hahnemann of Philadelphia).

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Lieut. Thomas F. Davies (N. Y. Hom. Med. College).

Lieut. James D. Christie (Boston Univ.).

Lieut. Francis T. Chase (N. Y. Hom. Med. College).

Lieut. F. P. Schenkelberger (Ohio State Univ.).

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CLINICAL DEPARTMENT

SPLENECTOMY IN WRONGLY DIAGNOSED LEUKÆMIA

The importance of pre-operative blood examination is forcefully illustrated by the following case:

On March 18, 1918, an enlarged spleen was received at the laboratory for examination. It measured 22 x 18 x 9 cm., was firm in consistency and of normal brownish red color. On section, follicles were not discernible macroscopically, and fibrous trabeculæ were less prominent than normally. Frozen and paraffin sections were made and showed that the splenic pulp was extensively infiltrated with myeloid elements, among which eosinophil cells were numerous. The histologic diagnosis was plainly myelogenous leukæmia.

The surgeon who had performed the splenectomy gave the following very brief outline of the clinical side of the case: Physical examination revealed a large tumor in the left upper abdomen; this was considered to be of renal origin and attachment and seemed to warrant a tentative diagnosis of hypernephroma. Laparotomy was done; the "hypernephroma" was found to be a greatly enlarged spleen, which was removed. The patient withstood the immediate effects of the operation very well but died a few days later.

Splenectomy is indicated either for palliation or cure in several conditions characterized by splenomegaly; among these are Banti's syndrome, Gaucher's disease, primary neoplasms, Hanot's cirrhosis, certain cases of chronic malaria, and selected cases of pernicious anæmia. In leukæmia, however, splenectomy has almost always resulted in immediate fatality, the writer having heard of but one case that survived the operation and was still living at the end of three years. This case, too, was operated upon because erroneously diagnosed, although the abdominal tumor was here recognized as of splenic origin and was considered to be Banti's disease. The true diagnosis of chronic myelogenous leukæmia was established after the operation.

In both of these cases blood examination would have determined the nature of the disease, and in the first case, at least, the patient's life would have been preserved for some time.

H. U.

ŒSOPHAGITIS

Oesophagitis, that is, inflammation of the œsophageal mucous membrane, may be acute or chronic. Acute catarrhal œsophagitis (as opposed to corrosive, membranous, and purulent types) may be due to mechanical, chemical, or thermal irritants; or it may be infectious. Corrosive inflammation follows the swallowing of corrosive poisons; the membranous form rarely accompanies diphtheria; the purulent type is due to pyogenic infection. Chronic catarrhal œsophagitis occurs most often in devotees of nicotine and alcohol.

Simple œsophagitis is sufficiently infrequent to warrant the report of the following case:

Mr. H., 33 years old, developed very mild simple tonsillitis with the usual symptoms of redness, swelling, and painful deglutition. The inflammation in two days extended backward to involve the pharynx, the tonsils in the meantime gradually returning to their normal state. From the pharynx the inflammation spread to the œsophagus, involving this tract progressively in its entire length, but not extending into the stomach. The downward progress of the inflammation could be easily followed, because each day the symptoms were felt a little lower than before, and also because the involvement of any one part was so evanescent that when the middle of the œsophagus had been reached the pharynx was again quite normal, and when the lower part of the gullet was affected the upper portion had become clear. The larynx remained unaffected.

There was practically only one œsophageal symptom during the entire course of the disease, namely, burning when swallowing. Hot and highly spiced or salted foods and drinks, particularly, caused much distress during their downward passage. The entire attack, from the beginning of tonsillar inflammation to the disappearance of œsophageal symptoms, covered a period of twelve days.

HOMŒOPATHIC PERIODICAL LITERATURE

The Clinique. February, 1918

1. *What the general practitioner expects of the eye, ear, nose and throat specialist.* 63. Pattison, H. A.
2. *Skin lesions as found in syphilis.* 65. Church, J. L.
3. *Causes and treatment of varicose ulcers.* 69. Snavely, J. L.

Varicose ulcers may be divided into three groups:

1. Those due to circulatory disturbance;
2. Those complicating syphilitic, tuberculous, or other "granular" inflammation;
3. Those complicating neoplasms, particularly malignant ones.

The circulatory disturbance causing the first group of ulcers may be local anæmia from interference with arterial circulation or local congestion due to interference with venous return flow. The latter is most frequently a result of valveless or incompetently valved veins. This, in turn, is most often due to prolonged muscular strain or standing for long periods in one position. Pregnancy and phlebitis complicating it are common causes.

The prognosis in uncomplicated ulcers is good; a cure may be effected in three weeks to three months.

Treatment: Surgical measures give excellent results, but most patients refuse operation. Salves, cerates, and powders are worthless unless local mechanical support is applied at the same time. For such support elastic stockings are of little value because they fit imperfectly; bandages are good if properly applied, but few patients learn to do this so as to distribute the pressure evenly over the whole leg. Rest in bed with elevation of the limb will rapidly effect a cure in the very worst forms of ulcers simply because this procedure removes the cause; but few patients can afford or desire to remain in bed long enough to effect a cure.

Most effective is the supportive treatment of Unna, and 90 to 95 per cent. of uncomplicated ulcers treated by this method can be cured. Unna's method consists of the application of alternate layers of a special paste and bandage, the technic in detail being as follows:

First, to prepare the paste take two ounces gelatine, five ounces water, five ounces glycerine and two ounces of zinc oxide, or any multiple of these amounts may be used. Mix the gelatine, water and glycerine, boil and stir until the mass is thoroughly dissolved, then add the zinc oxide; this should be stirred to a smooth even paste. Upon cooling, this forms a gelatinous mass and

can be kept indefinitely in this state. By heating in a water bath it becomes liquid again and is ready for use.

With the patient in the dorsal position, the affected leg is extended and carried upward at an angle of about 40 to 45 degrees. It should remain in this position during the entire treatment, which usually requires about 30 minutes. To maintain this position, encircle the foot near the toes with several turns of a bandage to which is attached a cord which is suspended from the ceiling. It is well to cleanse the ulcer with some mild antiseptic so as to free it from pus and debris as much as possible; if crusts are present they should be removed. The leg should be shaved if necessary.

Next take a pure rubber bandage and bandage the leg securely, beginning at the toes and ending at the knee. This compresses the enlarged veins and forces the excess venous blood out of the limb, and should be allowed to remain on for about ten minutes.

The paste, which has been previously warmed, is now painted over the leg as far up as the knee. An ordinary two-inch gauze bandage is quickly applied over the painted area, again beginning at the toes; each time it encircles the limb it should be cut, allowing it to overlap an inch or two. After this layer is applied the leg should again be painted and another layer of bandage applied in the same manner. It is necessary to apply the paste as warm as possible, then there will be no difficulty in having the layers of bandage adhere to it; one should also work rapidly because the paste hardens quickly. Finally, a firm bandage is applied from the toes to the knee without cutting; the spiral reverse will give a more even compression. If there is considerable drainage from the ulcers, windows must be cut in the cast and the patient instructed to insert pledgets of gauze to take up the exudate. These should be changed as often as they become saturated, otherwise the cast will soon be ruined. Small ulcers need no drainage and will heal rapidly when bathed in their own exudate.

The patient is instructed to go about his usual vocation and to report about once each week. The pain usually disappears in about a week to ten days; if it does not, the dressing has not been properly applied and should be removed. If the ulcer is healing, the cast may be allowed to remain on the leg for from four to six weeks; then a new one should be applied. In many cases one cast is all that is required to heal the ulcer; in others, from two to four may be necessary. I always keep the limb in the cast for about twelve weeks, because there will be less tendency for a recurrence. In most cases the ulcer is not only cured but the varicosity in the veins seems to be obliterated, the constant pressure of the cast upon the walls of the emptied veins causing them to adhere. This

occurs quite frequently in recent cases, but it is not to be expected in the old chronic ulcers of many years' standing.

When the leg is extremely œdematous it sometimes happens that in a few days after the cast is applied it becomes very loose; in such cases a new cast must be applied at once or results will be disappointing.

Recurrences are not so frequent as one would expect, and as a rule are easy to correct, because the patient will return to you immediately upon the slightest sign of a recurring ulcer. It is well to warn the patient of the liability to recurrence and to supply him with some form of elastic bandage which should be worn for several months after the cast is removed.

4. *The surgical treatment of uterine displacement.* 73. Sickels, E. A.

Tijdschrift van de "Vereeniging van Homœopathische Geneesheeren in Nederland." January, 1918

5. *In memoriam. Dr. F. W. O. Kallenbach.* 2. Voorhoeve, N. A. J.

6. *Pyelocystitis bij kleine kinderen.* (Pyelocystitis in small children). 6. Schouten, J. P.

7. *Over chorioïditis.* 10. Tuinzing, E. C.

T. reports the case of a 14-year-old girl who complained of all kinds of queer objects before the left eye. These particles moved about in a blue spot no matter in what direction the eyes were directed. This had lasted several weeks. Conjunctiva, cornea, lens, and iris were normal, but in the choroid there was an atrophic spot, and the diagnosis of *choroiditis centralis* was evident.

8. *Een interressant geval.* (An interesting case of purpura hæmorrhagica.) 15. DeLeeuw, A. D.

Pulsatilla was used successfully in a case of purpura hæmorrhagica.

Journal of the American Institute of Homœopathy. March, 1918

9. *Homœopathy at the University of California.* 1071. Hill, S. A.

The teaching of homœopathic pharmaco-therapy at the University of California is offered in the second semester of the second medical year and throughout the third and fourth years. The instruction is partly didactic and partly clinical. "It should be understood that homœopathy at the University of California is elective. The demand for this instruction has been shown this year by the voluntary election of the course . . . of nine 'old school' sophomore students."

10. *Dakin's solution in industrial surgery.* 1074. Paul, V. A.

Paul is surgeon to the Yale & Towne Manufacturing Company, Stamford, Conn., and has used Dakin's solution for ten months in 7000 injuries without a single infection.

11. *Muscle tension in functional diseases.* 1076. Van den Burg, W. H., and Olcott, G. P.

12. *The mortality from degenerative diseases.* 1084. Hoffman, F. L.

13. *The nosodes of Hahnemann: their relation to modern serums.* 1096. Cowperthwaite, A. C.

14. *Sterility and the ductless glands.* 1101. Wilcox, D. G.

15. *A new treatment for the removal of superfluous hair.* 1115. Dieffenbach, W. H.

16. *The relation of the nose and throat to endocrine organs.* 1123. Palen, G. J.

17. *The importance of differential diagnosis of systemic conditions and focal infection.* 1126. Waterman, G. H.

18. *The responsibility of state medical boards in the present war emergency.* 1133. Sawyer, C. E.

19. *Medical students; an open letter to State Society Presidents.* 1147. Lee, J. M.

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20. *Röntgenology in vague gastro-intestinal diseases.* 1219. Perkins, C. W.

21. *Bringing our assets up-to-date.* 1231. Van Denburg, M. W.

22. *Pneumonia: observations on treatment.* 1233.

23. *Materia medica research: effect of homœopathic remedies on intestinal movements, and the action of veratrum viride upon muscular tissue.* 1243. Hinsdale, A. E.

24. *Scientific control of clinical testing: the necessity and desirability.* 1246. Blake, J. C.

25. *Study of the proving of the colon bacillus.* 1249. King, C. S.

26. *The cancer question in relation to women.* 1265. Ostrom, H. I.

27. *Treatment of injured tissues with electric modalities.* 1273. Gary, C. E.

28. *Disturbances of vision from pelvic disorders.* 1279. Rumsey, C. L.

29. *Perimetry and campimetry.* 1284. Lloyd, R. I.

May, 1918

30. *Materia Medica: its use and abuse.* 1357. Smethers, A. L.
31. *Repertory: practical way of using Kent's.* 1361. Senseman, M. I.
32. *Sanitary problems.* 1367. Kern, C. B.
33. *Prevention of tuberculosis.* 1369. Smith, F. C.
34. *Artificial feeding: report of an individual case.* 1378. Reznor, L. B.
35. *The ultra-violet rays in modern dermatology.* 1384. Bernstein, R.
36. *Hypostatic inflammation.* 1391. Cole, H. P.
37. *Foreign bodies in conjunctiva and cornea.* 1405. Champ-
lin, H. W.
38. *Teeth as a causative factor in nasal, ocular, and aural diseases.* 1410. Weaver, H. S.
39. *Homœopathic principles versus homœopathic schools.* 1417. Rice, P.
40. *Mispronunciation of medical terms.* 1422. McDowell, G. W.

The North American Journal of Homœopathy. March, 1918

41. "*Homœopathy: her vulnerable points and her strongholds.*" 216. Dienst, G. E.

This is a criticism of and reply to a paper of the same title read by Dr. Elizabeth Hanks before the American Institute of Homœopathy, 1917, and published in the Journal of the Institute for February, 1918. Dr. Hank's article is abstracted in the April *Gazette*.

42. *No laughing matter.* 220. Gurney B.

This illuminating title is strictly to the point and gives the busy reader much information as to the contents of the article. "No laughing matter," of course, could relate only to the usefulness of *natrium muriaticum* as a remedy in disease. The author's statement, "We know that salt has potency (strength) to preserve dead tissue (meat) indefinitely, then why has it not as much power on living tissue? Is not its influence proven by the intense smarting experienced when it is applied to a fresh cut or abrasion?" indicates that the alleged homœotherapeutic value of "common salt, a substance we eat daily," is, perhaps, a laughing matter after all.

43. *Grouping of a few remedies according to the electronic theory and the law of similars.* 222. Enos, J. W.

44. *Biodynamo chromatic method of diagnosis.* 241. Joslin, I. W.

45. *Smallpox.* 249. Johnson, V. M.

46. *Rules to be observed by the patient in the psychic treatment of inebriety.* 254. Woodbury, B. C.

47. *Given a stone for bread.* 265. Dawson, B. E.
 48. *The dangers of non-eruptive syphilis.* 270. Eastman, E. H.

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49. *Diphtheria.* 308. Grimmer, A. H.
 Cyanide of mercury was used prophylactically by Grimmer in over 100 families [presumably exposed to diphtheria], and no new cases of diphtheria developed. Indications for other remedies in diphtheria are given.
 50. *The scope of antitoxin.* 335. Eastman, E. H.
 51. *Homœopathy in surgery.* 342. Johnson, J. H. S.
 52. *Pneumonia: its uncalled-for sacrifice of lives.* 350. Lamphear, C. H.
 53. *Medical vs. surgical treatment of cancer.* 361. Dugdale, F.

The Hahnemannian Monthly. February, 1918

54. *Eye injuries: their treatment.* 65. Stitzel, J. W.
 55. *Therapeutic nihilism.* 78. Moyer, H. T.
 56. *The use of the repertory — considering pathology.* 82. Van Tine, J. L.
 57. *A pair of artery forceps in the intestinal tract for four years.*
 86. Northrop, H. L.
 58. *Can materia medica be made a basis of a scientific pathology?* 87. Baker, W. F.
 59. *Hæmatogenous infection of the kidney.* 110. Crichton, M.

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60. *The origin of dreams — a somatic theory.* 193. Platt, C.
 "Memory patterns aroused to activity during sleep, confused, and fragmentary, and interlaced, constitute the dream as we know it. The dream though not originating in impulses from the subconscious is still a cerebral product, and is of full psychic value as a revelation of the existing brain patterns which stand for our experiences of life."
 61. *Hereditary syphilis.* 204. Raue, C. S.
 62. *The ambulant treatment of rectal diseases.* 206. Adams, H. B.
 63. *Eclampsia.* 211. Broughton, L. D.
 64. *The epilepsy problem.* 216. Held, W.
 65. *Gastric and duodenal ulcer.* 227. Roberts, F. W.
 66. *Three polychrests.* 238. MacFarlan, D.

**The Journal of the Southern Homœopathic Medical Association.
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67. *Appendicular Neurasthenia.* 2. Sappington, E. L.
68. *Homœopathic remedies in obstetrics.* 7. Cummins, J. E.
69. *The great need of more doctors.* 12. Lee, J. M.

GENERAL MEDICINE

A study of diphtheria carriers. Lewis, D. M., *Bost. Med. & Surg. Jour.*, May 2, 1918, p. 602.

Among approximately 35,000 school children in New Haven, Conn., 687 nose cultures were taken and 34 nasal diphtheria carriers were found. Twenty-three others were discovered by school nurses, physicians, or teachers. Thus, 0.2 per cent of New Haven's school population were carriers.

It was shown that in four instances one carrier had made one other nasal carrier; in eight instances one carrier had made two other carriers, and in a like number one carrier had made three others. The multiple instances were frequent in families and explains the immunity of certain families.

In no instance of this series, as in no instance of several hundred such carriers observed by the author, has any carrier developed the disease.

[The virulence of the bacilli found in these carriers was apparently not determined. This is important because approximately half of such carriers harbor non-virulent strains of *B. diphtheriæ*, and it is highly probable that this lack of virulence is permanent.]

Primary syphilis of eyelid, with report of a case. Lloyd, H. D., *Bost. Med. & Surg. Jour.*, 1918, clxxviii, 609.

The left eye of this case showed a thickened upper lid with a superficial ulceration 5 x 8 mm., situated near external canthus upon the skin surface. There was firm but painless enlargement of preauricular lymphnodes and of those in the left posterior cervical triangle. The skin showed widespread maculo-papular syphilitic rash. No sign of genital or anal infection or of inguinal lymphomegaly was discoverable. Spirochætæ could not be found in material taken from the lesion, but the Wassermann reaction was strongly positive.

The patient denied sexual exposure but said that he remembered using a dirty towel and later ascertained that it had just previously been used by a man with the pox.

H. U.

BOOK REVIEWS

The Stereoscope in Ophthalmology; with Especial Reference to the Treatment of Heterophoria and Heterotropia. David W. Wells, M.D., F.A.C.S., Professor of Ophthalmology, Boston University School of Medicine; Ophthalmic Surgeon, Massachusetts Homœopathic Hospital. Pp. 143, illustrated. Globe Optical Company, Boston, 1918.

This is the second edition of Dr. Wells' little book, somewhat enlarged and with several changes. Heterotropia (strabismus), and particularly a tendency thereto, e. g., heterophoria, are considered in detail, and special attention is paid to various forms of treatment and their indications. Although this is primarily a book for ophthalmologists, yet other practitioners of medicine should find much of value in it.

H. U.

Pharmacology and Therapeutics. Preventive Medicine. (The Practical Medicine Series.) Bernard Fantus, M.S., M.D., Associate Professor of Medicine, Subdepartment of Therapeutics, Rush Medical College, Chicago, Ill., and Wm. A. Evans, M.S., LL.D., Ph.D.; Professor of Preventive Medicine, Northwestern University Medical School. Pp. 384. Price \$1.50. The Year Book Publishers, Chicago, 1917.

This volume is one of a series of ten issued at about monthly intervals, and covering the entire field of medicine and surgery. Each volume is complete on the subject of which it treats for the year prior to its publication. This series is published primarily for the general practitioner; at the same time the arrangement in several volumes enables those interested in special subjects to buy only the parts they desire.

The trend of the numerically dominant school of medicine is indicated by the small number of drugs that are considered worthy of discussion by the author. To physicians who have had training in homœopathic pharmacology the book should be a valuable adjunct and a guide in the use of a few drugs whose non-homœopathic use is warranted.

H. U.

The Psychopathology of Hysteria. Charles D. Fox, M.D., Philadelphia, Pa. Pp. 437. Price \$2.00 net. Richard G. Badger, Boston, 1913.

This work is one that may be read with much pleasure and profit. To the reviewer it seems that the author is thoroughly versed in his subject, and his discussion of it is entertaining as well as highly instructive.

E. M. JORDAN.

LEGISLATION ON MEDICAL SUBJECTS

Massachusetts House Bill No. 1024, a bill to provide for the commitment of the feeble-minded, reads as follows: "If the commission on mental diseases has reason to believe or receives a complaint in writing that there is a neglected, dangerous or uncontrolled feeble-minded person in the community, it may cause an investigation by an agent of the commission to be made and may further cause the alleged feeble-minded person to be examined by a physician to determine whether or not he is feeble-minded and requires commitment. The commission, through its agent, may make application for commitment to the judge of probate in the county in which the feeble-minded person is found. Unless the person sought to be committed is present at the time of the hearing, or the application is made by some one legally entitled to the custody of such person, notice of the application and of the time and place of hearing thereof shall be given to the person sought to be committed, and the order of commitment shall state what notice was given or the finding of facts which made notice unnecessary, and shall authorize custody of the person until he shall be discharged by order of a court or otherwise in accordance with law. The commission shall recommend that said person shall be committed to a school for the feeble-minded, to an institution for defective delinquents, or to the custody or supervision of the commission on mental diseases."

RECENT DEATHS

Walter E. Reily, M.D., aged forty-seven, graduate of Homœopathic Medical College of Missouri in the year 1896; member of the Missouri Institute of Homœopathy, of the American Institute of Homœopathy, and of the American College of Surgeons, died of pneumonia at his home in Fulton, Missouri, early in May.

Lieut. **John R. Wood**, M.R.C., aged thirty, of Hallock, Minn., graduate of Hahnemann Medical College and Hospital, Chicago, in the class of 1911, died February 3, from pneumonia, at the base hospital at Fort Sam Houston, Texas.

Reuben W. Walters, M.D., aged seventy-nine, Chagrin Falls, Ohio, graduate of Western Reserve University Medical Department, 1867, and Cleveland Homœopathic College, 1873, died at his home April 19, of pneumonia. Dr. Walters was a veteran of the Civil War.

Arthur J. Morris, M.D., Bloomington, Ill., age 63, Hahnemann Medical College and Hospital, Chicago, 1891, died April 23.

Samuel D. Allen, M.D., Oak Harbor, Ohio, aged 65, graduate of Homœopathic Hospital College, Cleveland, 1885, died March 4, from cardio-vascular renal disease.

John P. Jackson, M.D., Norfolk, Va., graduate of Southern Homœopathic Medical College and Hospital, Baltimore, 1895, died at his home on April 29.

SOCIETY MEETINGS

Boston District, Massachusetts Homœopathic Medical Society

At the May meeting of the Boston District Society, held in the Auditorium of the Evans Memorial at 8 P.M., May 2, 1918, the following program was presented:

1. *Prevention and isolation of contagious diseases in children's wards.* Samuel A. Clement, M.D.
2. *Nephritic infection in children.* Stephen H. Blodgett, M.D.
3. *Chorea in children.* Ernest M. Jordan, M.D.

The next meeting, October 3, 1918, will be devoted to obstetrics.

Massachusetts Surgical and Gynæcological Society

The ninetieth session of this society was held at the Evans Memorial, Massachusetts Homœopathic Hospital, Boston, on Wednesday, May 15, 1918. During the scientific session the Bureau of Surgery, Dr. W. F. Phillips, Chairman, presented the following list of papers:

1. *Treatment of every-day rectal troubles.* Edwin W. Smith, M.D. Discussion opened by Frederick W. Halsey, M.D.
2. *A study of 1400 operative cases in rectal surgery.* Frederick W. Halsey, M.D. Discussion opened by Harry J. Lee, M.D.
3. *Treatment of procidentia.* George R. Southwick, M.D. Discussion opened by Mary B. Currier-Woods, M.D.

As a wartime measure the customary dinner was omitted.

Vermont Homœopathic Medical Society

The annual meeting of the Vermont Homœopathic Medical Society was held at Montpelier on May 29, 1918. Dr. DeWitt G. Wilcox of Boston was present as delegate from the American Institute of Homœopathy to perfect plans for the federation of state societies. The following papers were read:

1. *Gall-bladder infections.* DeWitt G. Wilcox, M.D., Boston, Mass.
2. *Treatment of pneumonia.* Edward Kirkland, M.D., Bellows Falls, Vt.
3. *Some uses of electricity in medicine.* George I. Forbes, M.D., Burlington.

THE ILLEGITIMATE BABY'S RIGHTS

The rights of illegitimate children and the State's responsibility for seeing that every child, no matter what his parentage, has the nurture, protection, and education essential to his usefulness as a citizen are for the first time given complete national recognition in the Norwegian laws concerning illegitimate children, according to a report issued by the Children's Bureau of the United States Department of Labor.

These laws make the State instead of the mother responsible for establishing paternity. The State holds both parents equally and continuously responsible for the illegitimate child. . . . "The child shall be entitled to bringing up — maintenance, training, and education — from both its father and its mother." The report contains a translation of the several Norwegian laws, with amendments, on illegitimate children and their care. A history of the efforts through which the legislation was secured is given in the introduction.

The attitude which looks upon illegitimacy as a child-welfare problem that must be solved for the sake of the child and of the State is exemplified by this Norwegian legislation. In connection with its studies of the bearing of the war upon child welfare the Children's Bureau examined the evidence obtainable, but could not find that it justified the statements that have been circulated of widespread increase in illegitimacy since the war. The Bureau believes, however, that the needs of the illegitimate child must be considered in the Children's Year campaign "to save 100,000 children's lives during the second year of the war and to get a square deal for children." In the Children's Year Working Program attention is called to the necessity of providing opportunity for normal development to the child of unmarried parents.

HEALTH CONSERVATION A WAR-TIME NECESSITY

So many physicians have entered the Army and Navy service that it is becoming increasingly difficult for those who have the civilian population under their care to give them proper attention. The prevention of many diseases by prophylactic measures is therefore assuming greater proportions each day as the war continues. Smallpox and typhoid fever have been practically eliminated as army diseases, simply because their prophylactic treatment has been made a routine procedure. Typhoid can be eliminated from the civil population just as it has been eliminated in the Army, and it is the duty of the physician to suggest to his patients that they protect themselves against epidemics of disease which can be avoided by proper prophylactic measures. In these days when every individual is needed to carry on the work of the large factories which are supplying our troops with the sinews of war, there should be as little sickness as possible, not only because the production of war materials is retarded when skilled workers are unable to discharge their duties, but because it is fundamentally wrong to take up space in our hospitals and the time and energy of nurses and physicians with cases of diseases that can be prevented.

The time factor is an important one just now, and those prophylactic agents which bring about immunity in the quickest possible time and with the least loss of energy should be given preference. It is fortunate therefore to have at hand sensitized bacterial vaccines which, according to Besredka and other authorities who have confirmed his findings, bring about an extremely rapid immunizing response — the immunity beginning twenty-four to forty-eight hours after the injection of the serobacterin. In the case of ordinary bacterins the immunity does not begin so rapidly and local and general reactions are more severe and prolonged. The value of typhoid immunization with a bacterial vaccine composed of a suspension of killed typhoid bacilli in physiological salt solution is unquestioned. The greater rapidity of bringing about immunity by using the sensitized vaccine or typho-serobacterin gives the latter product preference, especially at this time.

It is also particularly timely to mention that many sufferers from hay fever have been able to remain at their posts because of prompt prophylactic immunization with Hay Fever Pollen Extracts. The time for immunizing fall hay fever sufferers is at hand.

CONFERENCE OF PUBLIC HEALTH OFFICIALS TO BE HELD IN WASHINGTON

Important matters affecting the relations of the State and Federal health authorities to the conduct of the war will be considered at the annual joint conference of the United States Public Health Service with State and Territorial Health Officers, to be held in Washington on June 3 and 4.

The sanitation of extra-cantonment areas, especially as related to the work of the State and local health authorities, will be one of the subjects on the program. Reports will be made as to the success of the cooperative arrangement developed during the past year for preventing the interchange of disease between civil and military populations.

Attention will also be given to the control of venereal diseases, cerebrospinal meningitis, typhoid fever, trachoma, hookworm, and pellagra in relation to the health of the military forces. Each of these diseases will be discussed separately; but all of the communicable diseases will receive more or less consideration in their relation to the public health during the war.

Other subjects will be the relation to public health of industrial hygiene and sanitation, especially in war industries; the care of the health of tuberculous soldiers on their return to civil life; the use of records of drafted men for public health purposes; effects on the public health of the forthcoming shortage in the medical profession.

Among the subjects not so closely related to the war are: the securing of better morbidity reports, and the question of pure water supplies for railroads. There will be reports of standing committees in regard to many of the subjects outlined above and in regard to the sanitation of public conveyances, rural sanitation, and increasing the efficiency of the conferences.

The sessions will constitute the 16th annual conference of State and Territorial health authorities with the United States Public Health Service.

PROGRESS OF BIRTH AND DEATH REGISTRATION IN THE UNITED STATES

The recent inclusion of Hawaii has extended beyond the limits of Continental United States, the area for which the Census Bureau annually collects and publishes death statistics. Within this area now reside about 73 per cent. of the total population of Continental United States and Hawaii. It comprises, in all, 27 states, 43 cities in other states, the District of Columbia, and the territory of Hawaii. East of the Mississippi the only states not included are Alabama, Delaware, Florida, Georgia, Illinois, Mississippi, and West Virginia, while west of the Mississippi the only states included are California, Colorado, Kansas, Minnesota, Missouri, Montana, Utah and Washington.

The annual collection of death statistics from states and cities maintaining adequate registration systems was begun by the Census Bureau in 1902, the first report covering the calendar years 1900 to 1904, inclusive, and for each succeeding year a separate report has been published. The original registration area contained 40 per cent of the total population of the country. It remained unchanged until 1906, since which year it has shown an almost uninterrupted increase in geographical extent and in proportion of total population, until at present it contains nearly three-fourths of the country's inhabitants.

In birth registration highly satisfactory progress has been made during the past two years, although there are still a number of states in which adequate death registration prevails, but in which the registration of births has not yet reached a sufficiently close approximation to completeness to justify the acceptance of the local records by the Census Bureau. The birth-registration area, as at present constituted, comprises 19 states — the six New England states, New York, Pennsylvania, Maryland, Virginia, North Carolina, Kentucky, Ohio, Indiana, Michigan, Wisconsin, Minnesota, Utah, and Washington — and the District of Columbia. This area is estimated to contain about 51 per cent. of the total population of the country, as against about 31 per cent. when the collection of birth statistics was begun, a little more than two years ago, from an

area comprising the six New England states, New York, Pennsylvania, Michigan, Minnesota and the District of Columbia.

This growth, in so short a time, is very gratifying indeed. It is, however, unfortunate that in the United States the registration of vital phenomena has thus far depended, first, upon adequate state or municipal legislation, and, second, upon the adequate enforcement of that legislation. As a result, some states and municipalities maintain efficient registration systems, while others do not. Until the matter is placed under Federal control or supervision it is not likely that reliable birth and death records, approximating completeness, will come into existence throughout the entire United States.

MEMORANDUM FOR EDITORS OF MEDICAL PUBLICATIONS

Attention is directed to the fact that on March 27, 1918, your cooperation was solicited in a memorandum explaining the necessity for medical officers conforming with the regulation of securing authority from this office before publishing professional papers.

Further attention is now called to that portion of the memorandum for Division Surgeons which makes it necessary to submit professional papers to this office *in duplicate*. Will you kindly aid this office by submitting *two* copies in every instance.

By direction of the Surgeon General:

(Signed) C. L. FURBUSH,

Colonel, Medical Corps, N. A.

CONSERVATION OF ALCOHOL, SUGAR, AND GLYCERIN

Under date of March 19, the Food Administration circulated a letter calling the attention of physicians to the campaign of F. Upsher Smith of St. Paul to conserve alcohol, sugar and glycerin by recommending the adoption of infusions, decoctions and solid forms of medication in place of elixirs, syrups, fluid extracts and tinctures.

This course appealed to the War Service Committee of the American Drug Manufacturers' Association as such a radical departure from the prevalent method of prescribing that they judged it advisable to request the Council of National Defense to call a conference of all interested government officials with a view to considering the wisdom of this propaganda. Accordingly on April 12, a meeting was called at which were present Mr. A. Homer Smith, of the Council of National Defense, who acted as chairman; Doctors Ewing, Alsberg and Kebler of the Department of Agriculture; Messrs. Reuter, Hughes and Merrill of the Food Administration; Maj. J. K. Mitchell of the United States Signal Corps; Mr. L. L. Summers of the War Industries Board, and Drs. Dohme and Eldred of the Committee on Standards and Deterioration of the American Drug Manufacturers Association.

In connection with the proposed change of formulæ to conserve alcohol, sugar, and glycerin, extensively discussed by Mr. F. Upsher Smith in the drug journals, Dr. Dohme pointed out that it is easy to work out the proposed changes on paper but that it would require time to determine whether or not even the slightest reduction of any of the substances might not materially affect both the therapeutic strength of the preparation and also its keeping qualities. He showed that the formulas of the U. S. P. are the result of fifty years' experience and, in most cases, the survivors are the fit ones that give the full strength of the essential preparations in the solution. Physicians, he said, have learned by experience the dosage that gives the desired therapeutic effect and any widespread change in formulæ, with its resultant change in strength of preparations, would inject uncertainty into the practice of medicine. He also called attention to the danger of affecting compatability, stating that the physician now knows positively that a preparation made with a certain solvent will enable him to mix certain organic or inorganic substances and that a change in the solvent would in many instances throw him into confusion.

So far as extemporaneous prescribing is concerned, it developed that this would be attended by grave difficulties, as the physician who has been accustomed to prescribing fluid extracts, etc., would have difficulty with the former, since in many cases the corresponding substitute would vary in strength and to some extent in physiological action. As an illustration of this variation, the case was cited of infusion digitalis which is hard on the digestive organs and does not produce the accurate results which the tincture gives and which are so necessary in the therapeutic uses to which this drug is put. It was demonstrated as well that druggists would not conserve these substances when used as preservatives by the manufacture of their own preparations for immediate dispensing as the Food and Drug Law would require such preparations to conform to U. S. P. standards, just as they do those now purchased ready prepared.

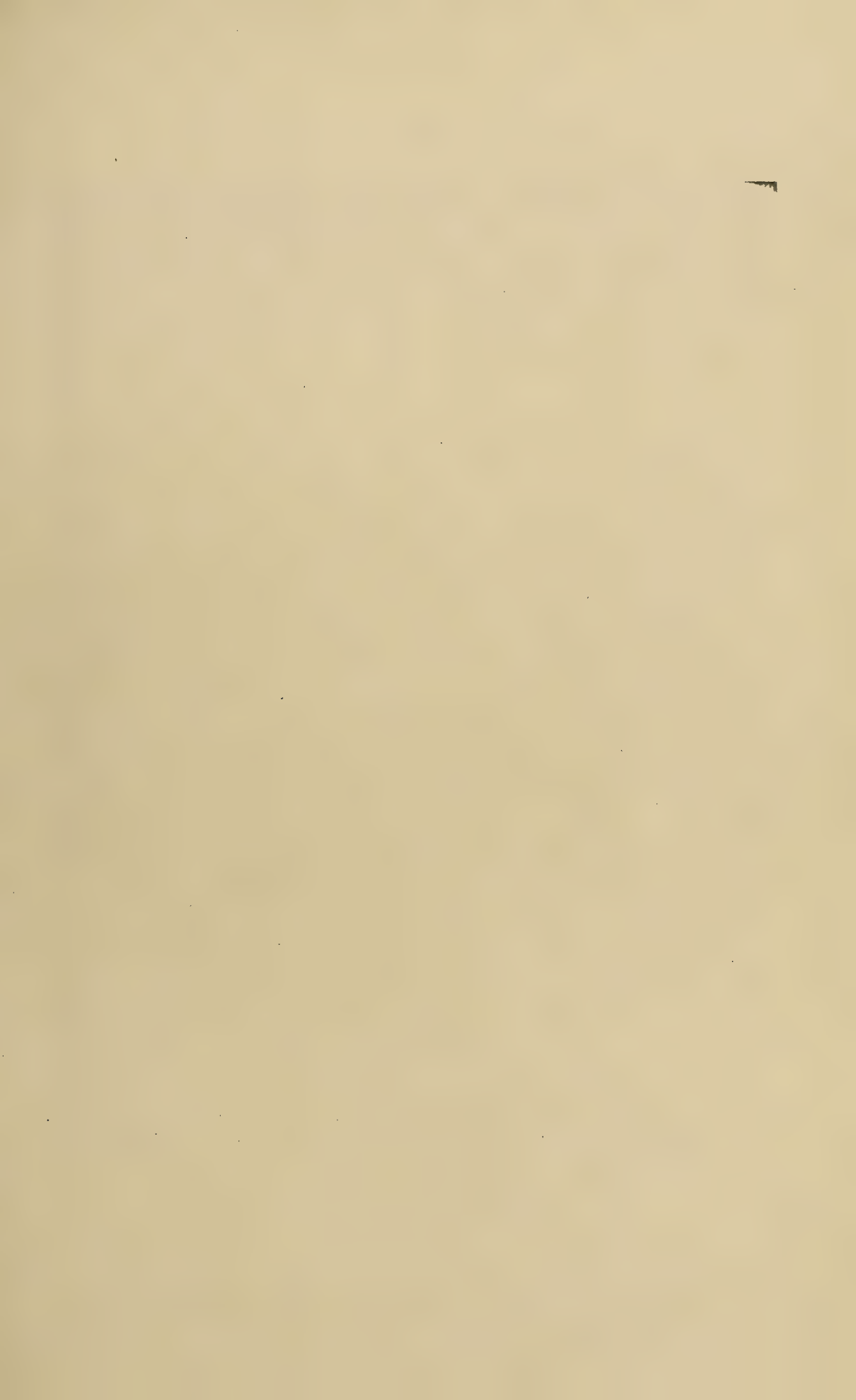
Mr. Summers of the War Industries Board settled the question of the necessity of conserving alcohol in pharmaceuticals by saying that there is no necessity for conserving alcohol in medicinal preparations. The amount conserved would be very small, he said, and there is plenty of alcohol for all essential purposes. In this connection he stated that if the amount of damaged corn corresponds to the amount for the past six or eight years, the country can continue to produce alcohol, and he added that at present there is a big surplus of damaged corn that can be used for no other purpose.

In fact, Mr. Summers expressed himself in favor of relieving the severity of the restrictions placed on the use of denatured and non-beverage alcohol so as to make it more readily accessible for bedside purposes. Complaints on this point had been received, he stated, from all over the country and indicated need of relief.

When sugar was considered it developed that the amount used in medicinal preparations represents about two-tenths of one per cent of the amount used by confectioners and it was agreed that this quantity was too insignificant to warrant an attempt at conservation measures.

Glycerin proved the one item of the three on which it seemed at all advisable to consider conservation, as there is a possibility of a stringency before the year is out and the amounts of this substance used for medicinal purposes is relatively large. Dr. Dohme, therefore, agreed for the Committee on Standards and Deterioration of the American Drug Manufacturers Association to undertake a study of medicinal preparations both official and unofficial for the purpose of conserving glycerin in them wherever they found it safe and advisable to do so.

Dr. Eldred, however, expressed the position of the Conference on this matter when he said, "I think we all feel that there are other steps which can be taken to meet a glycerin shortage besides affecting a change in medicinal products. Such other steps should be taken first. Every possible means of saving glycerin should be exhausted before the pharmaceutical industry is touched. We feel that at some time, perhaps not this year, or next, or the year after that, but we don't think this applies to the present, the situation may arise that will make it necessary to touch pharmaceutical products. But we don't anticipate that anything will be done about it immediately." — *Bull. Amer. Drug Manufact. Ass.*





FRANK CHASE RICHARDSON
(1859-1918)

CAT.

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IN MEMORIAM

Frank Chase Richardson

In the death of DR. FRANK CHASE RICHARDSON, which occurred on June 20 in Duxbury at the home of his life-long friend and colleague, Dr. N. W. Emerson, not only the medical profession, but the community at large, experienced a loss, the realizing sense of which the years to come can but serve to deepen and confirm. The wide scope of his interests, the broad catholicity of his tastes, the kindly, genial warmth and just strength of his personality, the sympathy and insight of his finely tempered mind, all gave rise, through the wealth of associations thus engendered, to an influence in the community which was wholly exceptionable. In the deep personal sorrow of the very many who mourn his loss may be found some measure of his service and his work.

Doctor Richardson was born in Boston on August 11, 1859. His parents were of old New England ancestry. The public schools of his native city afforded him his early education. Electing medicine as a career he entered Boston University School of Medicine and was graduated therefrom with the degree of Doctor of Medicine in 1879. During the following year he studied at Hahnemann Medical College of Philadelphia, receiving there the M.D. degree in 1880. Immediately after graduating from the latter institution, he went into general practice, but his mental bent led him more and more into the special field of neurology, and in this specialized branch of his profession were spent the later years of his professional life. That he might the better equip himself to cope with the varied and subtle problems of his chosen field, he pursued post-graduate studies in New York, at Harvard, and finally in Vienna.

The story of his professional life is one of steadily increasing attainments, of ever wider public service, and of the broader recognition which his qualities so amply warranted. As an expert consultant in his chosen field he enjoyed the respect and admiration of the legal profession for his integrity and fine-mindedness as well as for the wide scope and erudite grasp of the intricacies of the subtle and complex field which was his own.

His connection with the Massachusetts Homœopathic Hospital alone forms a record of many years of public service. As chief of clinic in the Homœopathic Dispensary, and subsequently in a similar capacity to the Out-Patient Department of the Massachusetts Homœopathic Hospital upon the merger of the former with the latter, and as neurologist to the hospital, Doctor Richardson gave of his experience and skill to thousands, during many years of service. For a long time he was also consulting physician to the State Institution for the Insane at Westboro.

The Evans Memorial for Clinical Research and Preventive Medicine, a department of the Massachusetts Homœopathic Hospital, of which Doctor Richardson was the director from the time of its inception, stands as an evidence not only of the gracious philanthropy of the generous donor, Mrs. Robert Dawson Evans, but also of Doctor Richardson's keen and kindly appreciation of public needs. His wise counsel and advice were largely instrumental in shaping the form of this splendid public gift. The Public Health Talks, which formed one of the many phases of activity of the institution, were directly under the personal guidance of Doctor Richardson, and in the brilliant group of lecturers, which he assembled yearly, was found an educative influence of great communal import. Other educative influences were also developed in the institution, and the young men who have been and, in the years to come, will be trained there will form a permanent and ever-growing evidence of his appreciation of the benefits and possibilities of service of the gift whose interests he conserved.

As an educator, further, Doctor Richardson was active in other fields. Early called to the instructing staff of his Alma Mater, he filled the various chairs in his special department, in his later years becoming Professor of the Diseases of the Nervous System, and head of that department. His powers of organization and executive ability were early recognized, and Boston University School of Medicine profited for many years through his service as a member of the Executive Committee, and particularly in the years when he was registrar of the school. The generations of students who felt his kindly, wise,

and just influence will ever carry the remembrance of those associations.

A keen and ardent sportsman, Doctor Richardson was a significant figure among the yachtsmen of New England. At the time of his demise he was closely affiliated with several of the organizations promoting this sport, and was Vice-commodore of the Boston Yacht Club.

While still a lad, his quickness of mind and genial warmth of character won him a place in the brilliant group which surrounded John Boyle O'Reilly, and the associations thus begun grew and increased with the years. An inveterate first-nighter, the close personal friend of many of our leading actors, singers, painters, and writers, Doctor Richardson's unusual gifts of good fellowship made him as welcome a guest in the gatherings of those dedicated to the arts as did his professional attainments in those of his scientific brethren. Many clubs, fraternal orders, and like organizations knew him as a helpful and well beloved member. The scope of his professional interests is evidenced by his presidency of the Boston Homœopathic Medical Society, of the Massachusetts Homœopathic Medical Society, and the Society of Neurology and Psychiatry.

With a personality evoking respect and affection from those with whom he came even casually in contact, his passing is attended with the deep regret of the community in which he lived and which he loved and served, and his remembrance is a precious possession for the friends left behind, whose name is legion. So, though he has gone from among us, though we shall miss the cheery, humorous word, the kindly understanding, the wise counsel, and the helpful judgment, in our remembrance of these and his other qualities, Frank Chase Richardson will live imperishably in the hearts of the many who now mourn his loss.

A. W. R.

ORIGINAL COMMUNICATIONS

THE PRINCIPLES OF HOMŒOPATHY AND MODERN SCIENCE*

WALTER WESSELHOEFT, M.D., Cambridge, Mass.

For a long time it has seemed to me that an attempt should be made to bring the principles of homœopathy into preordained and normal harmony with those of ever changing and never resting modern science. By this I do not mean that the practice to which our school was in the outset devoted should necessarily be harmonized with dominant practice, but rather with the constantly varying newer views by which in the end the profession must be guided in dealing with the ills it is daily and hourly called upon to meet. To my mind there has been a discrepancy not only between the traditional pathological conditions and the daily practice of the "old school," but also between our profession and our therapy.

I have been aware that this effort to harmonize has been the unceasing aim, conscious or unconscious, of the leading minds in our branch of the profession, though it is true that the majority have accepted and practiced (as in the outset we were all bound to do) the reform as completed in itself. As a matter of course this could not permanently stand, vigorously as it has held out to the present day. From the outset, too, the mentioned discrepancy has been the apple of contention on the part of both the dominant school and the foremost writers and workers on our side. For ourselves, despite the more or less successful struggle, both theoretical and, in a measure, practical, we have to acknowledge that for half a century we have been unable to make any actual headway. Christian science, osteopathy, and other non-professional half truths have limited the progress of homœopathy, chiefly by robbing it largely of public support, an element which in these days is so essential to the continued life of a system like our own. The material successes of which we may justly boast, as the result of the early impulse, do not bring us nearer the goal for which, if we are to live, we must strive.

The tripod of principles on which homœopathy is reared has never been touched by all the argument, vituperation, or opposition, malign or benign, it has encountered. The adaptation of the remedial agent to the part for which it has an affinity or to the pathological process, the need of exact provings, therefore, and the lessened dose to the point of producing a normal reaction, continue to stand today as scientific aims for the profession. These

*Read before the Hughes Club, April 26, 1918.

things we can teach, as we have elected to do, to a rising generation; coupled with the circumscribed successes they have given, however imperfectly, into our hands. More and more, however, we see that these successes are limited by many other practical agencies of a therapeutic nature, and more and more are we called upon to establish the precise field within which our practice, that is, its application, may be shown to work.

These limits are necessarily forever varying and practically uncertain; and here, therefore, the almost insuperable obstacle both to general practice and to teaching should be seen to lie.

But in any therapeutic field the difficulty is the same. We either hold staunchly to the principles laid down, or we grasp more or less blindly at the so-called scientific agencies; of which the best that can be said is that they relieve us of a degree of the responsibility our own method does not inspire us to meet.

Out of this practical inconsistency and theoretical abandonment of conflict have grown the unhappy contradictions from which, it appears to me, there is but one course to free ourselves. This is a course of clinical research supported and directed by laboratory experiment now so freely offered by the Evans Memorial. In a desultory manner this has already been attempted both in Boston and in some western institutions, and it must be confessed that these attempts, as well as those made in England, have not been without certain results.

These two forms of inquiry, clinical research and laboratory experiment, are distinct in themselves, but so inseparably bound together that one, except for purely scientific reasons, should not be allowed to exist without the other. Divided they lose their practical application; hence it appears essential that both should be directed and watched by the same men.

I cannot escape the thought that here lies the great problem into which time, controversy, and the slow development of the present changing and changed views of pathology, throughout the practical profession, have forced us. We are lost unless we earnestly address ourselves and our institutions, with endless patience and foresight, to the solution.

It is a problem little understood by the laity, from university authorities down. Unless we follow the course indicated, our hospitals and dispensaries, laboratories and schools, must and will revert, as they already are doing, either to forms of treatment accepted as scientific (necessarily bound by modern and current theories), or we are driven back to the purely mechanical and unprogressive application of our principles to daily practice. It is to be feared that a large and not uninfluential group of our colleagues has persistently yielded to this old-fashioned view of homœopathy.

It has been sufficiently demonstrated that all forms of therapeutics lead to almost identical results, those cleaving to the least medicine, and costing the least in time and suffering, being slightly in the lead. Pharmaco-dynamically they are, therefore, stagnating, and here it is that our mission as physicians should lie. Beyond it we, as an organization, have no right or reason to exist, doctors of manifold resources though we may claim to be.

The problem is, therefore, a very weighty one. Its solution means years of quiet work, endless exchanges of opinion, a fixed organization of those interested, constant supervision, and a record shrinking from none of the inevitable failures. Only a long time and no glory can lead to accurate and available results or to real and teachable knowledge. So great is the undertaking that all attempts to introduce it thus far have proved discouraging failures. I, myself, if I may here allude to my own experience, have felt its wrecking effects; being deeply conscious that the profession was and is far from ready to enter upon a series of experiments so widely removed from and, in point of fact, opposed to daily practice. It has been necessary to wait, not only for an institution like the Evans Memorial, with an earnest set of workers, but also for such developments in science that would give us a clue as to where and how to begin, and that would furnish a directive force to keep us in a purely observing frame of mind and to hold us together.

For this *vis a tergo* I have waited, and believe it to have been found, not alone in remarks of leading men of the American Medical Association, but more especially in the experimental researches of Abderhalden, one of the foremost physiologists of Europe. After the most searching and guarded inquiries, in which few have followed him, he has established the principle of cell specificity founded upon the widest knowledge and the deepest insight into the nature of the cells, the organism built up from them, and the reactions through which they manifest themselves. These manifestations constituting life in its various phases, normal and abnormal, exhibiting themselves or refusing to do so under the law of stimuli and inhibition, controlled by a nervous system (so largely robbing us of free will), are yet open to agencies having a definite effect.

These manifestations, as before said, reside in the cells and in the pathological processes depending upon them, though liberated or inhibited by a force from without. These must be the subject of our study. Though varying in detail, they are seen both in health and disease and thus lend themselves to investigation, experimentally and clinically, in a manner approachable and welcome to the reformer.

To go over the ground again, the point is that each cell or organ built up of cells and possessing its own power of liberation and inhibition, is found to be open or closed to certain stimuli,

and that each cell has its own reaction to a limited number of reagents. It responds to them or resists them as long as it possesses the elements of life. So far, these elements, or that qualifying power, remain to us a closed book, but we are beginning to open its covers. The investigation is, therefore, necessarily an empirical proceeding, but strictly scientific in so far as it is controlled by methods and means of accurate observation.

Here we have in a nutshell the principles on which our system is founded:

First: The principle of cell specificity with the inherent property of individual reactions to respond to certain agents found in nature; and the heightening or lowering of this responsive power by nervous control.

Second: The search for these agents by provings upon a reasonably healthy organism, to find their affinity within the organism.

Third: The reduction of their disturbing force by that degree of dilution rendering them innocuous to what we call health, and yet of sufficient power to produce a reaction called in ordinary language beneficent, because leading in many cases to the restitution of the normal state.

To this restitution we, as practical men, when not dealing with immunization or preventive medicine, are aspiring. To cure promptly and harmlessly in a manner not vouchsafed the dominant means of palliation or invigoration (as is done for instance by chemicals or counteracting antitoxins, vaccins, or sera) is the course for which we have in a limited way elected to stand. All these methods are as yet in their infancy, as is ours likewise, but they are loudly calling for development from within the ranks to which we have elected to ally ourselves.

It is an easy matter to state our demands and to suggest vaguely a course of procedure, but an exceedingly difficult one to answer the hundred questions arising out of the attempt to approach our task. Where lie the clinical picture or the affinities of the case in hand? Where, in the thousands of symptoms produced by drugs, are the few available or practically discernible points or "characteristics" for adaptation to the individual phase of the disease? Where is the limit of safety to which an agent should be reduced to produce the form of reaction we desire, and, to make matters short, where, in the end and in the presence of the countless varying means constituting the resources of the competent physician, are the especial cases to which specific treatment, or homœotherapy, is to be applied? None of these questions is beyond an answer, but we cannot blind ourselves to the fact that among a multitude or even a small body of observers with differing views and experiences they call for sacrifices of individual predilections and steadfast agreement to a given method. Neither success nor

failure can be held as true results until after repeated re-trials under varying conditions and the study of individual peculiarities or idiosyncrasies.

In the lesser works of Abderhalden these questions are alluded to, more especially in the little work entitled "*Abwehrfermente*," in the larger one on physiology, "*Lehrbuch der physiologischen Chemie*," and in "*Conceptions nouvelles sur la structure et le métabolisme de la cellule*." In these works the difficulties are by no means overlooked, in fact they loom large, but, unfortunately, the present war and new investigations, more particularly into the origin, character and distant effects of hormones or internal secretions, have diverted the interest and energies of this rare experimenter. What a blessing to us as reformers had he continued to devote his life to the problems he has propounded and laid before the profession! It is to be feared that he, too, like so many others in all nations, has found himself pursuing an inquiry giving new force and actual support to a hated and despised practice, before which he decided for the sake of his position to call a halt. He has left to others the important and exhaustive labor of extending and fortifying what, long before his day, others had seized upon and endeavored to realize, though in an imperfect and one-sided fashion.

One thing is certain: a scientific truth once uttered, and demanded by a suffering laity and a profession ever conscious of its imperfections and short-comings, will never die. Unripe as ours may be, and thus an inviting mark for criticism, invective, and opposition from the highest to the lowest, it will never fail to rise again in new forms, with new and better equipped adherents. No matter how many of its votaries may have suffered and fallen by the wayside, some way will be found to bring to fruition that reform for which, despite all misunderstanding and misconstruction, its originator hoped.

This brings me to the questions now before the faculty of Boston University School of Medicine and to which I, though no longer an active member of the faculty, replied essentially as follows:

1. A sectarian school appears to me an anachronism; hence I do not give my opinion in its favor. Nevertheless, the introduction of "old school" teachers into the faculty cannot do otherwise than place this school in a secondary position.

2. The teaching of homœo-therapeutics should be conducted in Boston University School of Medicine in no way save by a post-graduate course of sufficient extent. This I favor, since from the outset I have contended for lectures on this specialty to doctors only. But how this would tend to meet the problems now raised, I fail to see. The founders of the school had in view the teaching of homœopathy, and the funds originally given were for this pur-

pose. Hence, moral and legal questions now arise to complicate the scientific one proposed.

It was most difficult for me to express my doubts and the uncertainties of the problem confronting us, in the few words stipulated in the questionnaire. I therefore venture to explain my position more at length. My plea may be beside the mark, but is the result of what has been in my mind for many years and follows directly what I have already said.

At the outset it appears to me that, taken by themselves, nothing is to be gained by affirmative answers to the questions before the faculty, although I have acquiesced partially in the sentiments of the majority. The two propositions, *viz.*, the elimination of the sectarian denomination of the school, and the introduction into the faculty of one or more teachers of the current therapeutics, and perhaps, also of the modern pathological views, seem to me, while most plausible and even unanswerable as stated, to be of doubtful effect in producing the results intended, chiefly for the following reasons:

I cannot consistently, after a life devoted to the cause and the aims expressed above, throw over the denomination of our system, in view of its past history or the present state of all our organizations. I must make a distinction between the needs and position of our faculty and the dominant name of our theory and practice. It would be yielding too much, and by yielding, our faculty would confess our school to have accepted a secondary position.

Our students have entered our portals for reasons powerful with lay applicants but possessing no professional weight. A predilection in favor of the law of similars and for harmless small doses is ever apparent among those coming to our standard; but in the pursuit of the further curriculum these early considerations are easily overborne and set aside by the instruction offered. Not resting on well grounded information, these earlier convictions are confessedly seen to be quickly neutralized by pathological views and the therapeutic practices of an all-powerful dominant school, which readily impress themselves on the reason and consciences of growing and plastic minds. Therefore, it is these which become the practical acquirements of later professional life, and it is here that our peculiar, not to say false position becomes apparent.

Side by side with the generally recognized essential foundations for future practice, we have attempted to instill instruction as to the meaning of the law of similars, of the nature and importance of symptoms, and of homœopathic materia medica. In this way the students' heads have been unintentionally confused. As these disciplines represent to the nascent medical mind a life, a whole life, of close study and observation, covering a wide field and constituting in reality a hardship, it is most natural that by the great

majority the course of least resistance should be chosen. This course promises respectability, general scientific acknowledgment and a certain freedom from responsibility; from which follows an ease of professional existence not vouchsafed by a more close adherence to homœopathic doctrines. In this way it has gradually come about that in lay as well as in medical circles, the legend has arisen that no difference actually obtains between the practices of the two schools. The dominant school has not been slow to raise this ethical point and thus to cast a slur on those calling themselves homœopaths.

When to this is added that, at the very outset, help was sought through the diploma of a university unsympathetic to and unacquainted with the aims and methods of the founders of the Boston University Medical Faculty, it was inevitable that the good reformatory blood of a special but undeveloped scientific system should, in the end, have been sucked by an institution founded not on necessity but on purely altruistic and educational emotionalism.

It is recognized that so many elements have now conspired to give direction to the questions before the faculty for determination, that no adequate opinion can be briefly expressed. Not the least of these elements is the social and professional success of graduates of our school; but I am forced to declare my conviction (held from the start of my entering the faculty, nearly half a century ago) that those who have succeeded would have done so if graduated from any other good school, and that we have been wrong in our policy. My contention from the first has always been for a limited school for those who had gone through their preliminary training in a well established institution, had practiced for several years a method affording them no satisfaction, and had thus come to us, striving with open minds to enlarge their field of usefulness.

My proposition, therefore, is that, since I cannot consent to the present status and at the same time want the school open to the new teaching, the feasibility of establishing a post-graduate school or course of homœo-therapeutics be considered. Out of this it will, to my mind, be far more dignified to graduate annually one or two men and women who know their own minds, rather than, as now, a large class of doubters or people who profess according to the name attaching to them.

In this way it would be possible to save the diploma of our school to past and future holders and thus to eliminate the ethical issue now crept in to raise grave doubts in the minds of many. For it cannot be denied that the early funds devoted to the school were given, as were those to the hospital, for the teaching and spread of homœopathy. This ethical and legal question we are not permitted to leave out of sight, necessary as it has become to contemplate the introduction into the faculty of elements opposing the original views and aims of our not-to-be-forgotten founders,

INTRAVENOUS INFUSIONS OF ISOTONIC DEXTROSE SOLUTIONS IN THE TREATMENT OF PUERPERAL SEPTICÆMIA. PRELIMINARY REPORT*

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AND

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During the pursuit of special hæmatologic studies, the results of which are to be published later, it was found by one of us that many cases of puerperal sepsis showed no or only slight leukocytosis, and that the severity of the disease, as evidenced by clinical manifestations, was not always adequately expressed by commensurate leukocytogenic reaction.

This observation led to a search for stimulants of leukocyte production, the use of which might be expected to exert a secondary and salutary effect upon the diseased, and it was found that intravenous infusions of isotonic sugar solutions had been used for this purpose by Audain and Masmonteil¹ in the treatment of septicæmia after war wounds.

According to these authors a leukocyte count of 5,000 or 7,000 before infusion was raised to about 25,000 in less than thirty minutes afterward; the temperature rose a little, and there was chill and sweating. The amounts injected varied between 300 and 500 cc. per dose, repeated several times daily, if necessary, until the desired result was accomplished. No untoward after-effects were noticed.

Charts I and II illustrate the effects of the sugar infusions upon the temperature and leukocyte curves of cases of post-partum infection, in which the total leukocyte count was low. In these charts the dominant curves present temperature variations, and the lesser curves depict changes in total leukocyte counts.

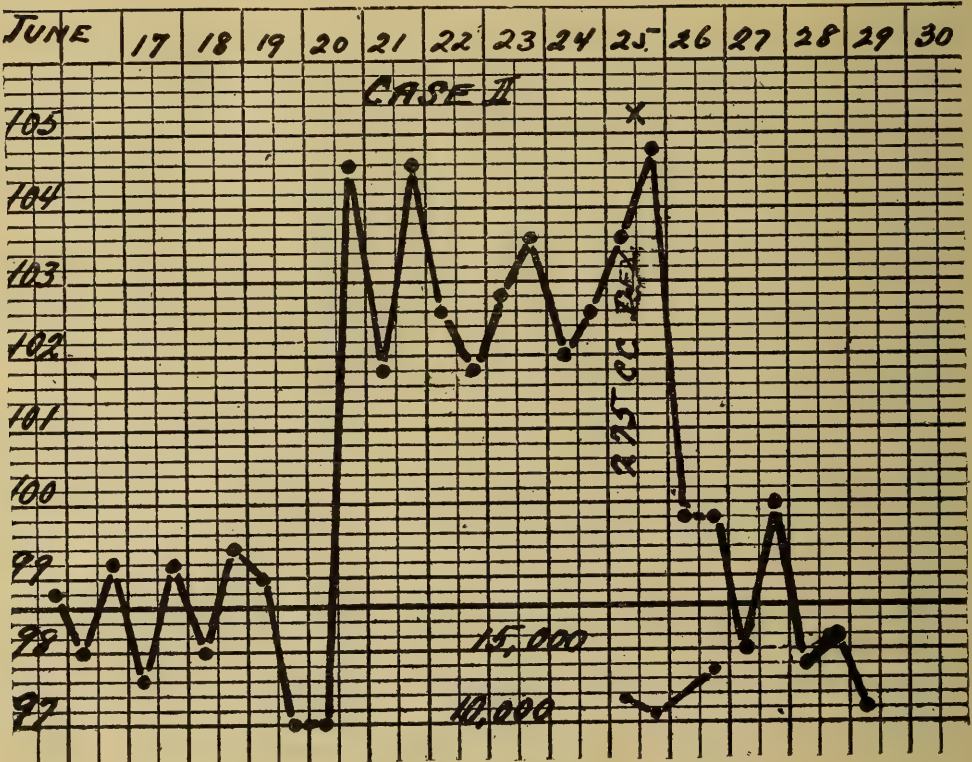
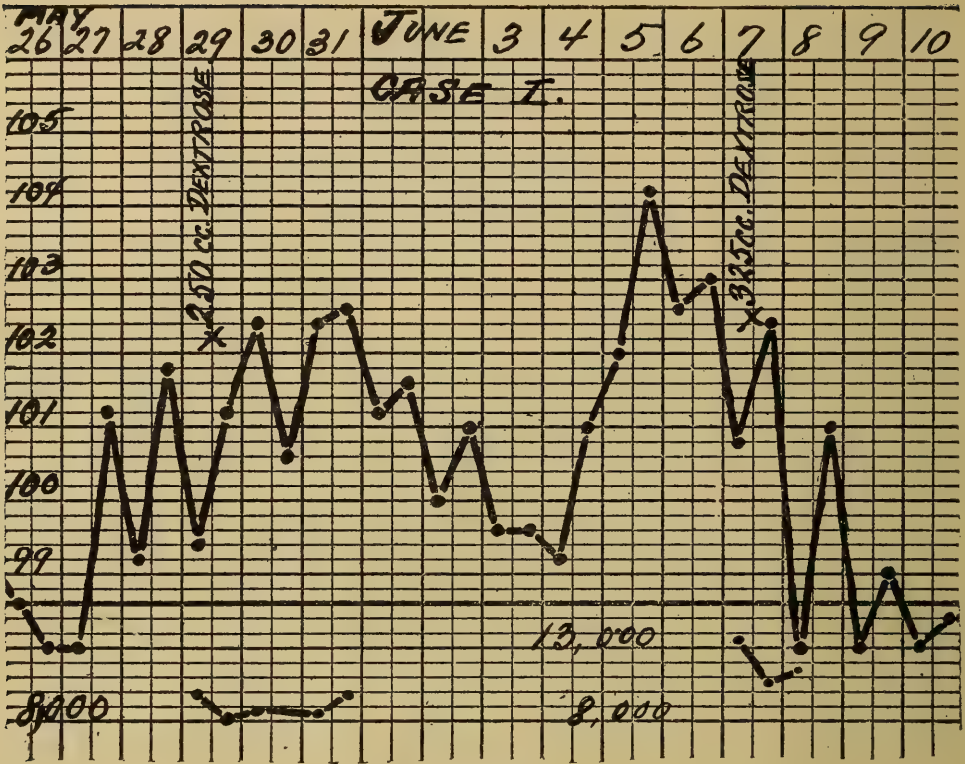
In case I a direct effect upon the temperature is not apparent, but in case II, where the temperature fell almost as precipitately as it rose, there can be but little doubt that the sugar infusion was responsible for the disappearance of fever. No other case of our series responded as promptly as this one.

Contrary to our expectation, we found that the leukocyte counts also fell slightly within an hour after each injection; so that, although most of our cases were benefited by the dextrose, it is evident that this improvement was not due to induced leukocytosis.

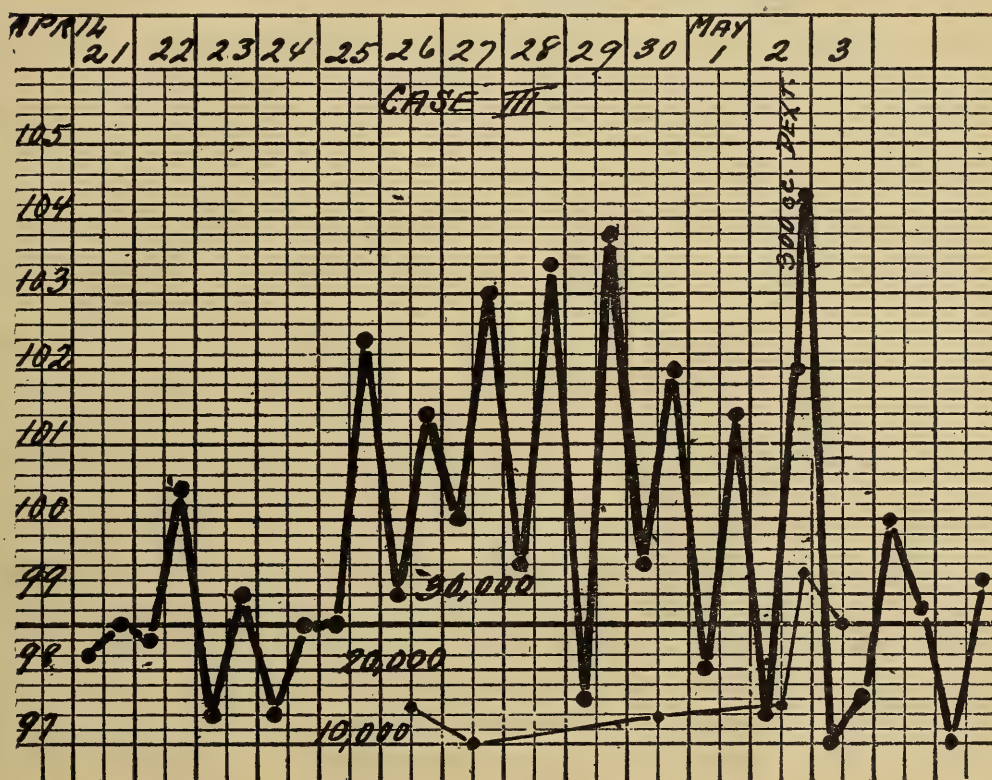
To determine whether these results, quite different from those obtained by Audain and Masmonteil, were due to possible differences of technic or whether they were peculiar to puerperal cases,

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¹ *Presse Medicale*, xxv, 641.



we infused a patient afflicted with empyema, whose blood showed a low leukocyte count. The effect was startlingly typical of what the French authors had described: the leukocyte count rose from 15,200 to 32,500; there was severe chill, sweat, and rising fever, and then a sudden fall of the temperature to subnormal. Chart III illustrates this case.



THE SUGAR PROBLEM *

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Why do we eat sugar? Ask the ordinary individual, and he will probably answer, because we like it or because it is sweet. Certainly, the average individual does not know why he eats sugar, except that it is sweet, and he likes it.

With the exception of white flour and flour products, there is probably no article of food that is eaten so extensively, and in such large quantities, as sugar; in fact, starch and sugar form the bulk of the average diet. It is right and proper that they should form the major part of one's diet, because the body is composed, to a very large extent, of carbo-hydrates and their products.

It is a curious fact that only a few short months ago the population of this great country of ours was thrown into a feverish panic over the official announcement made through the press concerning the "shortage of sugar." The coal situation has affected the people profoundly; but the fact of being restricted in the supply of sugar, and the possibility of being obliged to go without it, produced an alarm, an unhappiness and a dread, that made the coal shortage sink into insignificance. The excitement was hysterical in its manifestations, and anticipation of acute and dire suffering swayed the popular mind. The people considered themselves deprived, or on the verge of being deprived, of not only a staple article of food, but of one of the essentials of life. The idea of getting along comfortably without sugar did not seem to enter people's minds, and the suggestion that instead of being a calamity, the "shortage of sugar" was in reality a blessing, was looked upon as unworthy of a moment's consideration.

During the short time at our disposal, it is not my purpose to attack the sugar problem with the thoroughness of the research investigator. It will be necessary to omit lengthy discussion of the commercial, the agricultural, the chemical, the physiological, and other aspects of the subject, and, instead, to devote ourselves to only a few practical points.

Is sugar really a necessity? If so, what kind, and how much should one eat? Is there any standard that may be used as a guide? What becomes of it in the body? Can sugar hurt anyone? In answer to the first question, we are justified in saying "Yes." Sugar is an absolute necessity to the mammalian body, but this does not by any means mean refined, granulated,

* Read before the "National Society of Physical Therapeutics" at the meeting of the American Institute of Homœopathy, Detroit, Mich., June 19, 1918.

or commercial sugar. In this matter of sugar, mankind has been guided, as in other dietetic matters, by his palate, or by race or national habits, etc. Sweet things are said to taste good, and therefore everything is sweetened, especially among our modern peoples. There are very few articles put upon our table which do not contain sugar. Baked beans, lettuce and bread are not eaten without their share of sugar or sweetening. Porridges frequently are so covered with sugar that the cereal itself can not be seen and the natural taste is obscured. Tea and coffee are taken in a super-saturated solution of sugar. Cookies, cakes, pastries, puddings, jellies, jams, preserves, confectionery, and ice cream enter into the average daily menu, and berries, melons and fruits which are very sweet by nature have a liberal amount of sugar added to them, by perhaps the majority of people. If this were done in an intelligent response to a definite requirement of the body, it would be all right; but into this, as into so many of our habits, intelligence does not enter.

I have enumerated only the more common uses of sugar; many others will occur to you.

Attention should be called to the fact that the sugar in such common use is the refined sugar of commerce. The refining process need not be described; it is enough to say that the process which has been universally employed, and even now is in vogue in most places, is a complicated chemical one, which results, among other things, in a rather thorough demineralization of the sugar. This is the great fault of the diet of civilized peoples. Most of our food in the preparation or cooking becomes more or less demineralized, and to my mind this is the cause of many of the diseases to which humanity is subject.

In addition to the demineralization, the sugar represents a tremendously concentrated product. The sugar cane contains from 14 per cent. to 18 per cent. of sugar. The expressed juice contains from 15 per cent. to 20 per cent. The sugar beet contains from 12 per cent. to 16 per cent., and the juice from 13 per cent. to 17 per cent. By the simple process of evaporation, these percentages are raised to practically 100 per cent. This tremendous concentration, plus the demineralization, renders the sugar a very different thing from Nature's simple product, and it is to this point I am most anxious to call your attention.

In the days of the Civil War and for some time thereafter, there were found at our ordinary grocer's two or three or four kinds of sugar, ranging from the dark brown, slightly refined product to the "coffee crushed." It is only about 50 years ago that the refined granulated product became popular and

the brown varieties disappeared from the market, so that now they are difficult to obtain.

Co-incident with this change, there has been a marked increase in the number of cases of certain diseases. I will mention but one at this time: cancer. In my medical student days, cancer was supposed to be a disease of senility, not to occur until its victim was 65 or 70 years of age. Later it was found to occur in the 50's; still later in the 40's, and it is not uncommon today to come across cases of cancer in the 30's. Vital statistics show that in the registration portion only of the United States there are upwards of 52,000 deaths from cancer annually, and the number has been steadily increasing of late. I do not claim that the over-free use of granulated sugar is the cause of cancer or the direct cause of other serious diseases, but there is a suggestive co-incidence found in the facts referred to.

In this connection I frequently ask myself, why should there be so much tuberculosis; why so much insanity; why such a woeful prevalence of nervous prostration in its myriad forms? Why should the most intelligent and most highly civilized creatures upon the earth be subject to so many diseases? Why is the modern mother in such a majority of cases unable to nurse her offspring? Why should there be such an appalling number of children with defective teeth and the ill results of this condition?

Many diseases are said to be caused by germs, but the fact of immunity is well recognized, and why should not the human family be immune, as it doubtless was intended to be, to germ activities? It is well known everywhere today, that beri-beri, a very fatal disease, affecting chiefly the nervous system, is a result of eating an excess of demineralized rice, the popular food in countries where beri-beri prevails so alarmingly. It is well recognized today, as so beautifully proved by our National Public Health Service, that pellagra is produced by a one-sided carbo-hydrate (demineralized) diet. For many years scurvy among mariners has been duly recognized as a dietetic disorder. It can easily be proved that infantile scorbutus is due to an unbalanced ration. Now then:—If these and many other conditions are known to be due to improper food, why is it not reasonable to assume that many or most other diseased conditions may be due directly or indirectly to improper food?

If granulated, commercial sugar can be shown to be an unbalanced and unnatural food, why is it not proper under the circumstances to eliminate it from our diet? To suggest, if not to prove, that granulated sugar is unnatural, it is simply necessary to refer to its production. Nature certainly does not give

it to us in its commercial form. It comes in a weak, or moderately weak solution, and is obtained by evaporation, crystallization, and refining. Nature gives us sugar in a wonderful variety of substances. Our fruits and berries, many of our vegetables, and milk contain sugar in varying proportions. For instance, lemons, rhubarb and apricots contain from less than 1 per cent. to 2 per cent. of sugar. Blackberries, huckleberries, and blueberries contain 4 per cent. to 5 per cent., currants between 6 per cent. and 7 per cent. Strawberries, gooseberries, raspberries, and apples average $7\frac{1}{2}$ per cent. Sweet potatoes contain 4 per cent. to 6 per cent., corn and carrots 6 per cent., beets 8 per cent., oranges 5 per cent. to 10 per cent., bananas and peaches about 11 per cent., pineapples 12 per cent., plums 14 per cent., grapes and sweet cherries 15 per cent., fresh figs $15\frac{1}{2}$ per cent., and dried figs $51\frac{1}{2}$ per cent. Figs, dates and raisins go as high as 50 per cent. in the dried form. Peas, parsnips, turnips, and other vegetables contain easily demonstrable amounts of sugar.*

The sugar content of milk is an important as well as an interesting and suggestive matter.

COMPARISON OF BREAST AND COWS' MILK WITH RELATION TO LACTOSE CONTENT

<i>Authority</i>	<i>Brest Milk</i>	<i>Cows' Milk</i>
Meigs	7.4	4.9
Munk	5.0	—
Koenig	6.2	4.9
Heubner	7.0	—
Kamerer	6.5	—

The variation in the above figures depends in part upon the accuracy of the methods used and in part unquestionably upon the period of lactation which predominated in compiling the averages. Meigs' figures are most recent and probably the most reliable.

In milk from the pig, goat, buffalo, cat and ewe, is to be found 4 per cent. or 4 per cent. plus of lactose; in the rabbit only 2 per cent.; in the dog 3 per cent plus; in the llama, camel, and mare, over $5\frac{1}{2}$ per cent.; in the ass 6 per cent.; and in the elephant 8.8 per cent.

My point in citing these various statistics is to draw attention to the fact that Nature has a serious plan in view in the food she furnishes her creatures. If we do not comprehend the full importance of that wise plan, would it not be well for us to use it as our guide and standard, and not try to modify or improve a plan of which we do not at present grasp the significance? Certainly Nature intended us to eat sugar.

*(These percentages are from "Farmers' Bulletin 535," year 1913.)

No one with intelligence will deny this statement, and it is only respectful to assert that Nature, which I take to mean the Creative Intelligence, knows what it is about and it will be wise for us to follow as closely as possible the hints that Nature gives us.

Mankind, for instance, evidently does not approve of Nature's plan in the making of fruits and fruit juices, and so very liberally adds sugar to fruits and berries when eating them; and for the so-called purposes of "preservation," will add to the fruit juices in the making of jams, preserves, jellies, marmalades, etc., up to pound for pound, thus interfering most seriously with Nature's intentions. Is this a wise and rational thing for intelligent people to do? Is it not right to expect that Nature will resent such interference and, so to speak, punish the offender? This, at all events, seems to me a rational view to take of the matter.

It is easy to prove that the too free ingestion of sugar is injurious, both to the growing and the developed organism. Even the laity knows that it is a bad thing to eat too much confectionery; that sweet desserts, pies, puddings, etc., are upsetting to the digestion; that headache, bad taste in the mouth, coated tongue, "biliousness" of various forms, indigestion, loss of appetite, flatulency, etc., are sure to come, singly and in combinations, from a free indulgence in sugar compounds.

It is well known that the well-rounded outlines or the "aldermanic figure" of the middle-aged individual, and the obesity that occurs at any period of life, are due to over-eating of sugar and its so closely allied starchy products. It is easily shown that the obesity which so many look upon as a sign of prosperity and good health is sure sooner or later to overtax the circulatory apparatus, and lead to serious organic conditions.

Of course, we all know that people prefer to eat things they like, even if they do get obese, and then try to "reduce their flesh" by massage or mechanical means. This is simply one illustration of the aphorism "there are thousands hacking at the branches to one who is striking at the roots."

The evil results so commonly attributed to the citrus fruits, to tomatoes, strawberries, etc., are due in all probability to the additional sugar which is so generously eaten with them, rather than to the fruits and berries themselves. I can see no reason why thoroughly ripe fruits, berries, etc., should not be eaten by rheumatics, neurasthenics, and other invalids, and for years it has been my custom to permit and even advocate their free use, *always prohibiting*, however, the addition of cane sugar. I have not yet learned why fruits, vegetables, etc., such as rhu-

barb and cranberries, that are too sour to be eaten without the addition of sugar, should be eaten at all.

It may be interesting to note that the *per capita* consumption of sugar in the year 1904, as found in the Senate Document Vol. VI (1914) was as follows in the following countries: Servia, Bulgaria, Roumania, Italy, Greece, and Turkey, from $6\frac{1}{2}$ to $8\frac{1}{2}$ lbs., which may be looked upon as a low annual consumption. (Reference is here made to commercial sugar, and not to the sugar found in honey, raisins, figs, etc., which in these countries are liberally consumed.)

In Spain the *per capita* annual consumption was a little over 12 lbs., in Portugal and Madeira 14.7 lbs., in Russia $19\frac{1}{2}$ lbs., in Austria-Hungary $20\frac{1}{2}$ lbs., in Belgium 25.6 lbs., in Germany 32.9 lbs., in France 34.4 lbs., in the Netherlands 35.6 lbs., in Sweden and Norway 42.7 lbs., in Switzerland 44.1 lbs., in Denmark 60.6 lbs., in the United States $70\frac{1}{2}$ lbs., in the United Kingdom $81\frac{1}{3}$ lbs.

I make no comment at this time on the dietetic habits referred to, but some interesting conclusions might be drawn from them.

In order to satisfy the craving of the child and the adult for sweet things, I heartily recommend the free use of dried currants and raisins; of prunes, figs, dates, pineapples, bananas, apples, peaches, etc. Not only can the craving be satisfied in this way, but the caloric needs of the body can be fully met and the over-ingestion of sugar will be unlikely to occur.

Instead of getting panicky, then, over the "shortage of sugar," over the fact that we can buy only a few pounds at a time, let us rejoice that our attention has been called to the wisdom of Nature in so generously providing for our needs, and let us hold before our eyes, not only in this, but in other connections, the provision which Nature has made for the sustenance of our bodies. In other words, let us simply, honestly, and even reverently study Nature. Let us pay heed to her revelations. Let us learn to interpret her language. Let us follow her dictation, for these dictations, though not written on stone as were the Commandments of the Decalogue, are nevertheless "commandments," obedience to which is not only prudent, but is sure to be rewarded by manifold blessings,

DIET IN DIABETES

STEPHEN H. BLODGETT, M.D., Boston, Mass.

Although my paper is only supposed to cover the subject of diet in diabetes, still it is necessary that I give very briefly an outline of the different conditions under which sugar appears in the urine, in order that my remarks in regard to the diet may be more intelligible.

The term diabetes is so variably used to express so many different conditions that I much prefer the term glycosuria, at least until a better one is found.

There are two main organs in the body, certain disturbances of which will cause sugar in the urine. One is the liver and the other the pancreas; in the former the disturbance is functional, in the latter it is organic.

We will consider first the cases showing sugar in the urine where there is functional disturbance in the liver. This abnormal hepatic function may be secondary to diseased conditions elsewhere, such as severe headache, hæmorrhage in certain parts of the brain, congestion at the base of the brain, tumors and growths in the brain, pressure on the fourth ventricle, and sometimes blows on the head affecting the fourth ventricle.

These cases are usually characterized by a normal amount of urine of not very high specific gravity and containing only a moderate amount of sugar, even while the patient is on a diet rich in carbohydrates. The amount of sugar varies from a small trace to thirty or forty grams in twenty-four hours. This daily variation does not follow closely the amount of carbohydrate ingested; and if the congestion of the brain disappears, the output of sugar in the urine stops, without any change having been made in the diet.

Another form of glycosuria which should be placed in this class is that accompanying acute appendicitis. Many times I have seen such cases showing moderate amounts of sugar in the urine (five to fifty grams in twenty-four hours). When the appendix was removed, the sugar promptly disappeared, though the patient continued to take the same diet on which he had been when the sugar was present in the urine.

Gall-stones and malignant growths in the liver may cause sugar to appear in the urine. Cases of these diseases excrete large amounts of urine, or of sugar, and the removal of carbohydrates from the diet does not increase the amount of sugar in the urine as rapidly as one would expect. In the gall-stone cases, after successful removal of the gall-stones, the patient can usually take normal amounts of carbohydrates without causing any sugar to appear in

the urine. In the cases of malignant growth in the liver, there is usually a very large amount of indoxyl in addition to the moderate amount of sugar.

Another type of hepatic glycosuria is one of the common forms of so-called true diabetes. This is usually seen in persons between thirty and sixty years of age. They usually lead a more or less sedentary life, are often stout, very fond of food, and disposed to be "high livers." While they are taking a natural diet, there may be thirst depending in degree on the amount of sugar in the urine. The urine is apt to be increased in amount, though rarely exceeding 3,000 cc. in twenty-four hours, with a specific gravity running from 1.028 to 1.040, and the daily amount of sugar varying from 50 to 200 grams. There may be a very slight trace of albumen in the urine, usually a very large number of large sized uric acid crystals in the sediment, and frequently calcium oxalate crystals, and a few hyaline casts. The color of the urine is normal, and the reaction usually strongly acid. Diacetic acid never shows in uncomplicated cases of this class, and it is only when they are complicated with the pathological conditions found in the pancreatic form that diacetic acid will appear. Acetone rarely ever shows, and if so, only in the slightest trace. This particular type is more likely to occur in men than in women; and the presence of sugar in the urine is very liable to be discovered at first by accident, as during an examination for life insurance.

Another type of this form may occur in patients of ordinary build, in whose urine no sediment of uric acid shows, and especially in persons between fifty and seventy years of age and of rather spare habit. There may be the following symptoms: gangrene of the toes, itching of the labia, boils and carbuncles. The other symptoms are the same as those in the previous form, with the exception that the patients frequently are subject to painful neuritis.

As to the pancreatic form, undoubtedly cases of this type are due to a disturbance in the islands of Langerhans, and since in many of these cases we can get a clear-cut history of infection somewhere else in the system immediately preceding the appearance of the sugar, it seems to me justifiable to conclude that all of them are due to an infection by some germ causing a degenerative process in the islands of Langerhans, the entrance of the infection being at some other place in the body. Very frequently we see cases, that have remained quiescent for weeks and sometimes months, start suddenly into activity following tonsilitis or any other infectious disease.

The most common form of this class may occur at any age, but is most frequently seen in children, and in adults of the working class. The most marked symptom is intense thirst, and the curious fact in connection with this symptom is that oftentimes the patient

can tell on what particular day the intense thirst commenced. It has happened several times that a mother has told me that her child had been perfectly well up to the time of going to bed on a certain day, and that during the night the child had developed most intense thirst.

As a rule, sugar is present in rather large amounts, running from 75 grams to even 600 or 800 grams in a day. Of course, the specific gravity is high and the amount of urine is large, varying from 2,000 to 15,000 cc. in twenty-four hours. Acetone and diacetic acid are almost always present, usually in large amounts; generally a few hyaline casts may be found in the sediment, and albumen is present to a comparatively slight degree. Next to the intense thirst and dryness of the mouth, the most noticeable symptoms are apt to be increased appetite and great loss of weight and strength. There is also in many of these cases a spot in the region of the pancreas which is tender on deep pressure. This appears more plainly if deep pressure is made over various places in the abdomen with one finger, the same depth of pressure finally being made over the pancreatic region, where much increased tenderness will be found. The elimination of carbohydrates from the diet is not followed so quickly by the elimination of sugar from the urine as in the hepatic form.

The other form of the pancreatic variety is much more chronic. It usually occurs in older persons (twenty to fifty years) and the onset is not so sudden. It rarely occurs in large, stout persons.

The progress of the degenerative process in the pancreas can be stayed, but only very seldom cured. The patient's carbohydrate tolerance cannot be improved except to a very slight extent. The amount of sugar excreted is not entirely dependent on the amount of carbohydrate ingested, and any form of infectious disease, more especially those affecting the tonsils, will cause recurrence of sugar, acetone, and other symptoms.

With these various forms of glycosuria in our minds, let us consider the main question of diet, as by diet almost entirely, at present at least, are we able to control this condition.

In regard to the cases which might be classified as temporary glycosuria, where the cause is pressure on the brain or an inflamed appendix, the original seat of the trouble should be sought and remedied, if possible, and very little attention need be paid to the diet.

As to the form due to primary functional disturbance in the liver, which is perhaps the most common form seen in practice, the diet plays the most important part; for it is because of improper diet continued for a long time that the function of the liver becomes deranged and the sugar appears in the urine.

During the past two or three years the so-called "starvation"

treatment has become very popular, more especially with physicians. I feel that this "starvation" treatment, as at present carried out, is to a large extent a serious mistake. For four or five years I have been using a diet (oftentimes with better results than have been obtained with strict "starvation" treatment) which has accomplished all the results sought, with no loss of strength to the patient, no unfavorable symptoms, no danger of coma (which sometimes happens during the strict application of the "starvation" treatment) and, what must also be considered from the patient's standpoint, with less discomfort.

There are certain broad rules that I use for my guidance as to diet in these cases. First, the *carbohydrate tolerance*, or ability to take carbohydrates without causing sugar to appear in the urine, varies with each individual case. Consequently, the amount and kind of carbohydrate allowed in the diet must be determined for each individual patient. Then arrange the diet so that this carbohydrate is given in the form most pleasing to and most easily digested by that particular patient.

Also remember that the carbohydrate tolerance varies in each patient with different foods and does not follow absolutely the chemical analysis. For instance, one patient on a uniform diet will show no sugar in the urine when four ounces of potato are added to it, but will show sugar when one ounce of bread is substituted for the four ounces of potato; and another patient will show sugar when four ounces of potato are added to the diet, but no sugar when one ounce of bread is substituted for the four ounces of potato.

In hepatic glycosuria the tolerance for carbohydrates increases the longer the patient remains sugar free, but it does not increase, or only to a slight extent, in the pancreatic form.

The amount and kind of food necessary for each individual to enable him to carry on his work varies also very widely in a practical way, notwithstanding the theoretical teaching that 2500 calories, for instance, are enough for the ordinary business man. Enough food must be given to allow the patient to perform his allotted and necessary duties moderately comfortably.

Furthermore, due regard must be given to any gain or loss in weight. The normal weight for each individual should be determined early in the treatment and the patient brought to that weight (in many cases slowly) and then held there. I consider the frequent use of the scale to determine the patient's weight a very important aid in determining the quantity and quality of the diet. In fact, I believe that the analysis of the urine as to sugar, the gain or loss of weight, and the patient's subjective symptoms are the three most important points in determining what he should eat.

Patients do better when they receive daily some green or uncooked food.

It has been my experience during the past twenty years that cases of glycosuria can be handled more easily and much more successfully if they are admitted to an institution where the kind and amount of food given and the output of urine can be watched accurately, and where, also, the patient does not see other articles of food which he is not allowed. In fact, I am so firmly convinced of this that I will not accept cases for treatment unless they will enter some suitable hospital or sanitarium.

Oftentimes it can be decided, after talking for a few minutes with the patient, from which form of so-called diabetes he is suffering. If, as is usual, it appears to be the hepatic type, I allow the patient to continue on his usual diet for twenty-four hours, so as to give me a basis in computing the reduction of sugar. After this preliminary twenty-four hours, the patient is placed on a diet approximately as follows:

Breakfast — a half orange or a quarter grape fruit, one or two eggs, two Listers muffins with butter, one cup of coffee;

Dinner — eight ounces of thin meat soup, one or two vegetables, two Listers muffins with butter, and water;

Supper — eight ounces of thin meat soup, one vegetable, three Listers muffins with butter, six olives or a small amount of cottage cheese, with a cup of weak tea if the patient wishes it.

In regard to vegetables, I let the patient select according to his individual taste from the following list: lettuce, celery, asparagus, cucumber, spinach, dandelion, Swiss chard.

On this diet the sugar will entirely disappear from the urine in from one to three days. The rapidity with which it disappears is an added help in determining the form of glycosuria under treatment and also in determining the carbohydrate tolerance for that particular patient.

Forty-eight hours after the sugar has disappeared, I begin to make additions to the patient's diet, adding a saccharin dessert or a baked apple sweetened with saccharin, and if the sugar does not return after two days, I add a moderate portion of meat or fish once a day. Two or three days after this addition, if no sugar has appeared in the urine, I increase slowly and cautiously the variety of vegetables, adding to the list string beans, green peas, cauliflower, cabbage, etc., and watching the urine each day after the addition of the food to see whether there is any return of sugar. In this way it is possible to tell how much and in what form it is best to give the patient the carbohydrates, and in the course of two or three weeks a normal basic diet for that particular patient is established. After that, it is only a question of trying various articles of food which the patient craves. For instance, if a patient is very fond of milk, I allow him, after determining his normal basic diet, to take six glasses of milk during twenty-four hours for

two consecutive days. If no sugar appears, I permit him to use at least two glasses of milk daily.

What I am trying to emphasize is to individualize cases and, in prescribing diets, to take into consideration the patient's habits, his ability to get various kinds of food, and his likes and dislikes.

A few general remarks in regard to various forms of bread may not be amiss. I have tried practically every kind of bread, more especially the so-called gluten breads, and also the various flours. It is almost impossible for a patient to continue for any length of time without something in the nature of bread. The gluten flours contain at least 20 per cent. carbohydrate, many of them very much more; and while they are a great advance from the ordinary wheat bread, still they are comparatively rich in carbohydrate.

During the past three years there has been put on the market a flour that contains less than one per cent. carbohydrate and makes a very palatable biscuit. It is Listers Flour. By the use of biscuits made from this flour, the patients are allowed bread and a great deal more latitude in the choice and amount of vegetables. I feel that the availability of a flour of this analysis has done more to aid the treatment of cases of so-called diabetes than any other one thing.

The question of automobile riding is asked by almost every patient. With some there is a return of sugar after a fifty-mile ride, and with others we do not get any return after a three-hundred mile ride. Therefore, if this question is asked, I advise the patient to try riding fifty miles. The urine excreted during eight hours after the return from the ride is examined, and if sugar appears the automobile riding is advised against. If none appears the patient is advised to take a longer ride, say two hundred and fifty miles, and the urine for the next twenty-four hours is carefully examined for sugar. If none appears the patient is allowed to ride not over one hundred miles on any one day.

If, from the history of the case, it appears probable that it is of the pancreatic form, I prescribe the same diet as outlined above, but I do not expect to see the sugar disappear as quickly as in the cases of the hepatic form. If there is decided emaciation and the history shows the case to be one of rapid progress, I give a much more liberal diet and consult to a large extent the patient's comfort, knowing that when the process in the pancreas has progressed to a considerable extent, a strict diet will at the most only prolong life for a few days, with corresponding discomfort for the patient, and may even, instead of prolonging life, hasten the coming of coma and death.

I wish to emphasize a warning here against placing a patient, who is much emaciated and far advanced in the disease, on a very strict or so-called "starvation" diet, as this will very likely cause

fatal coma to appear within a short time. Rather, these patients should be allowed within a short time considerable quantities of fresh fruits. If after two to four days the sugar entirely disappears from the urine, I then very cautiously and slowly (much more so than in the liver form) increase the amount and quality of the food, cautiously trying other vegetables. In this form, the carbohydrate tolerance never increases to any extent. In fact, if we can keep it from decreasing, we ought to feel very well satisfied.

Frequently the history in this particular form is somewhat as follows: the urine is rendered sugar-free, the patient slowly regains weight, the urine comes back to the normal amount, and we congratulate ourselves that the patient is progressing toward recovery. Then the patient is taken with an infectious sore throat or an attack of grippe, and we find that the sugar has returned in the urine, though the diet had not been changed. After further restriction of the diet the sugar has again been eliminated from the urine, but we find that the tolerance for carbohydrate is not as good as it was before. Usually, after some months or possibly a year or two, the patient has another similar attack, and after several of these, fatal coma develops. However, this is not always the case, as I have a few patients who have had this form of glycosuria, whose initial attack occurred from six to ten years ago, and who are now alive and attending to their ordinary duties.

If the patient is troubled with formation of gas in the small intestine and shows an increase of indoxyl in the urine, I give him Bulgarian bacillus or buttermilk. Many times, patients become constipated when placed on a restricted diet. If they do not defecate normally after three days, soap and water enema is given and repeated, if necessary, every three days. But as soon as the patient's tolerance has been determined, I try to add enough bulky food to ensure a normal daily passage. In many badly constipated cases, especially of the hepatic form, biscuits made of half bran and half Listers flour may be used.

As to saccharin, I will state, after having constantly used this sugar substitute, in some cases for twenty years, that I have never seen it cause any ill effects. My experience has led me to consider it a most useful adjunct in the treatment of cases of glycosuria, as its use allows many of our patients to satisfy their great craving for something sweet, without partaking of carbohydrate, and consequently makes it much easier for them to remain on a suitable diet.

In closing I would say: discover, if possible, from which form of the condition called diabetes the patient is suffering; remove the cause, if it can be discovered (and it frequently can), and then treat each individual patient according to his likes or dislikes for various articles of food, his ability and willingness to follow a certain diet, and his strength and his weight. In other words, individualize

each case. Don't, when a patient comes to you with sugar in the urine, think you have given him proper attention by handing him a slip of paper containing lists of foods labeled "may take" and "must not take," with orders to follow that, and don't put every case to bed on a water and brandy (so-called "starvation") diet for two to six days, then through a course of thrice-boiled green vegetables, next five per cent. vegetables, next, if still sugar-free, ten per cent. vegetables, and after that a diet containing 2505 calories, and while looking wise and scientific, explaining that 2500 calories are enough and you have added five extra for good measure.

419 Boylston Street.

EDITORIAL

BOOKS for review, exchanges and contributions — the latter to be contributed to the *GAZETTE* only and preferably to be typewritten — subscriptions and all communications relating to advertising and other business should be sent to THE NEW ENGLAND MEDICAL GAZETTE, 80 East Concord Street, Boston. Make checks payable to THE NEW ENGLAND MEDICAL GAZETTE.

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THE TEACHING OF PHARMACOLOGY

Because of great forward strides made in other departments of medical science it has come about that the study of drugs, and of their preparation, effects, and application, has in recent decades been outdistanced and largely neglected; so that pharmacology no longer holds as prominent a place, either in medical curricula or in medical practice, as it did many years ago. This is particularly manifest in colleges and with practitioners of the dominant creed, whose poly-pharmacy of old has given place to teachings and practices approaching pharmacologic nihilism.¹ Adherents to the doctrine of homœopathic drug application, both schools and individuals, have shown greater conservatism in this respect and still give relatively much time to the study of practical pharmacotherapeutics, although they, too, barring some very recent efforts, have largely abandoned experimental and developmental investigation.

In non-sectarian medical schools, and by this are meant not the *soi disant* non-sectarian or so-called regular schools, but schools in which all branches of pharmacology, including homœo-therapeutics, are taught, it is unfortunately the custom to divide the pharmacological department into two practically distinct chairs, one homœopathic and the other non-homœopathic. This separation is inefficient and scientifically unsound, and gives to pharmacology a prominence which is not warranted by its present relatively lesser importance. Homœopathy is merely one form of pharmaco-

¹ In the preface of a recently published year-book on materia medica and therapeutics it is stated that "therapeutics" has been stricken from the regular medical curriculum of Johns Hopkins University, and that other medical schools are likely to follow Johns Hopkins in anything it does.

therapy and should, therefore, be taught as a part of it. In no other way can students gain a clear perspective of the limits of applicability and the relative merits of various modes of drug action.

The majority of drugs have apparently two distinct expressions of their action upon the animal body; according to Arndt these are stimulation and depression. Both are due to the pathogenic or poisonous or, as Dr. Sutherland often expresses it, the sick-making power of drugs, the difference in effects being the result of difference in sizes of doses. Small (not necessarily minute) amounts stimulate, that is, their toxic action is not pronounced and is overshadowed by the reaction of the irritated cells; large doses, on the contrary, depress, that is, their powerful action overwhelms the cells, who are then incapable of reaction, and as a result the direct effects of the drug predominate in the symptomatic picture produced.

So that merely by varying the dose of a drug we may produce two diametrically opposed symptom groups, an indirect cellular reaction and a direct drug action, but both ultimately due to the same sick-making power of the drug in question. For illustration, let us suppose that a man is fisticuffed by another; he will at once be stimulated to resentment and retaliation (a man, mind you, not a Christian); but if he is struck with a sledge hammer or a pile driver the effect will surely be sedative. The type of kinetic force is the same in both instances; there is merely a difference in amount. The lighter blow of the fist excites anger, and this reactive anger and its consequences may be the only perceivable effects of a blow too light to inflict direct physical injury; similarly, a small dose of a drug excites cellular reaction, and this reaction and its consequences may be the only perceivable effects of a dose too small to do demonstrable damage to the cells. The greater force or the larger dose, on the contrary, are both so powerful that the struck man or the poisoned cell are either killed outright or stunned; there is no sign of reaction, and the direct injury done, resulting in a mangled body or a destroyed cell, is the only effect produced. If the force of the blow or the size of the dose be intermediate between these extremes, then the effect may be mixed, that is, there may be some reaction and at the same time a certain amount of demonstrable injury. Hence, it must not be assumed that drug action is always either clearly stimulative or solely depressing; both effects may be produced simultaneously and in conversely varying proportions, so that the two spheres of drug action are not divided by a sharp line, but rather merge into each other by gradual transition.

Such a conception of drug action makes it clear that the teaching of homœo-therapy, which with small doses aims to stimulate

cellular reaction, and of anti- and hetero-therapy, which with larger doses produces direct drug effects, should not be segregated but should be taught together and as inseparable parts of one subject — pharmacology.

And it is particularly pernicious to select teachers for either branch who are not also thoroughly versed in the other. An instructor in pharmacology should be competently trained in his subject at several pharmacologic centers; this will give him a breadth of view and a versatility which alone can insure proper understanding of the relationship between the various forms of drug action and a correct evaluation of their relative availabilities and merits in combating disease.

General acceptance and application of this undeniable truth would of itself sound the death knell of sectarianism. And, to repeat, sectarians are not merely those who are not graduates and practitioners of so-called regular medicine. On the contrary, the position of regular physicians who classify all non-regulars as sectarians is similar to that of the black pot that called the grey kettle black; for they are the blackest of sectarians who refuse to admit, without investigation, any virtue in forms of drug therapy other than that practiced by themselves. Nearly all homœopaths recognize and often avail themselves of the non-homœopathic action of many drugs. Nevertheless, it cannot be denied that most so-called homœopathic medical colleges overemphasize their homœopathic teaching; and this, too, is sectarianism. Homœotherapy is but a part of pharmacology, and pharmacology is only one branch of medical science; hence, it is not more reasonable for these colleges to call themselves homœopathic than it would be to label themselves anatomic or orthopedic. They are schools of medicine, not of homœopathy. The teaching of homœo-therapy should receive no greater prominence in their curricula than its relative importance deserves, and specific appellations that make them appear to be anything except what they should be, namely, schools of general medicine, ought to be abolished.

These changes, however, should be made only in order that certain existing unsound conditions may be remedied and by no means at the behest or to curry the favor of self-appointed arbiters of the medical domain, whose pharisaical lack of introspection prevents them from seeing the beam in their own eyes, although they pluck diligently and maliciously at the mote-laden eyes of others. Their campaign of extermination, waged against schools and practitioners of homœopathy, at first by brutal means of open discrimination and professional and even social ostracism, and later by subtle and apparently more effective *laissez faire* tactics, must be met by an energetically prosecuted counter-offensive. Schools teaching homœo-therapeutics could execute such a counter-stroke

in no better way than by being the first to abolish sectarianism; let them be warned, however, that this cannot be accomplished by the mere addition to the curriculum of a course in so-called old school *materia medica*, but only by fundamental reorganization and well-planned coördination of all pharmacologic instruction.

This, together with equally thorough standardization and modernization of all other teaching departments, will insure for these schools, and for their graduates, rank and reputation that are not dependent upon prejudicial and arbitrary classification; it will not only preserve for them their self-respect but will gain the respect and esteem of others; it will attract to these schools larger and increasing numbers of students, not only because strictly non-sectarian instruction is offered, through which knowledge of all branches of medicine may be obtained, but also because this instruction is as good as or better than that offered anywhere else; and finally and most important, it will be the first step toward blotting out medical sectarianism, the vilest stain that tarnishes the fair escutcheon of medical science.

H. U.

CORRESPONDENCE

PHILADELPHIA, June 7, 1918

To the Editor:

The Homœopathic Medical Society of the County of Philadelphia has appointed a committee, of which I am chairman, to institute a national campaign for the purpose of securing such modification of the laws regulating medical practice as will enable our medical schools to educate a sufficient number of men for civil and military practice. The shortage of doctors is now being felt in every department of civil life, and yet the number of medical men that have gone into military service is probably only a small proportion of those that will ultimately be needed.

We cannot win the war without ships, ammunition and doctors.

The efforts that have been made by the Surgeon General's office to secure physicians for our military force, in such a way as will work the least hardship to our civil communities, deserve the highest support and commendation; but two and two make four in dealing with doctors as well as with ships and guns; and four doctors can no more do the work of twenty-five than four ships can do the work of twenty-five. What results could we expect from the Emergency Fleet Corporation if, instead of bending their efforts to the production of new ships, they expended all their time and energy in merely shifting about those already in our possession?

The Homœopathic Medical Society of the County of Phila-

delphia feels that this condition of affairs offers a great opportunity to the homœopathic school to take the lead in a movement which appeals strongly to every reasonable man and which affects the welfare of every civilian and every man in military service.

I wish to ask your readers to take the matter up with their local societies, to write to their local medical journals and to put in their local newspapers all possible information regarding the subject. Above all, please write to Surgeon General Gorgas, and also to Lieut. Col. H. D. Arnold, in charge of the Department of Medical Education, Surgeon General's Office, Washington, D. C., at once, urging them to request all medical schools, who desire to render the greatest service to their country in this great crisis, immediately to take the following steps:

First: Accept students in the medical course directly from approved high schools. This would reduce the seven years' course to five, without any incompetency on the part of the graduates.

Second: Recognize a year's work in a military hospital as equivalent to a year in a civil hospital. This would reduce the course to four years.

Third: If, in the judgment of the Department, extreme necessity for doctors exists, the medical colleges might be run throughout the summer months and the standard four years' course be given in three years. This I regard as the least practical of all the suggestions, as if this step alone were carried out, its only effect would be to reduce the length of the medical course from seven years to six — a reduction in time that is insignificant in view of the inconvenience and hardships entailed upon the colleges and the students.

We are making plans to take this matter up at the Conference which is to be held in Chicago this month, with the representative medical colleges and the state medical boards and also to push it actively at the American Institute of Homœopathy.

We expect to meet with strong opposition from professional educators who cry out against the sacrilege of "lowering the standards." Such men must be brought to realize that the only standard that any medical school or that any physician will be judged by at this time is the standard of service.

No sincere man can deny that it is perfectly possible to take a man from an approved high school and make a competent physician of him within five years. If this statement is true, in view of the needs of our military forces and our civil communities, what adequate reason is there why we should not do so?

Urging you to give this matter your fullest support and co-operation at once as a patriotic duty, I am

Very sincerely yours,

G. HARLAN WELLS, M.D.

HOMŒOPATHIC PERIODICAL LITERATURE

The Indian Homœopathic Review, July, 1917

1. *Typhoid fever*. 185. Majumdar, J. N.

Report of two cases treated with homœopathic remedies.

2. *Subacute and chronic diseases of the respiratory organs from the homœopathic standpoint. Part I*. 187. Goldsbrough, G. F.

A good discussion of the method of taking the case of a patient presenting a cough. Several remedies are mentioned with indications.

3. *On ceanothus americanus in its relations to disease of the spleen*. 206. Burnett, J. C.

The British Homœopathic Journal, February, 1918

4. *A symposium on natrum muriaticum, phosphorus and sepia. (Cont.) Notes on Sepia*. 33. Neatby, E. A.

5. *Colchicum*. 51. Stonham, T. G.

6. *Notes from the Southport Cottage Hospital*. 58. Wheeler, F. J.

Calendula lotion gives excellent results as a dressing for septic wounds. Hypericum lotion is useful in dressing painful stumps.

March, 1918

7. *Do we need a new work on pharmacology and therapeutics? If so, what shall it be like?* 71. Neatby, E. A.

The author urges that we have "no up-to-date" book which presents the subject in a readily accessible way; he recommends a revision of Hughes' "Pharmacodynamics" as offering a satisfactory solution. If not this, a book written on the general lines of that book should be tried.

8. *Cinchona and quinine*. 80. Neatby, E. A.

April, 1918

9. *Therapeutic uses of electricity and X-rays*. 97. Grace, J. J.

Under auto-condensation, the author justly warns against lowering high blood pressure too suddenly by this form of treatment, and in cases of parenchymatous nephritis advises using light baths instead of electricity to reduce pressure. The static wave and X-ray are also discussed.

10. *Therapeutics of heart cases: cases of overstrain. Hints in the treatment of inflammation*. 109. Goldsbrough, G. F.

Pacific Coast Journal of Homœopathy, April 1, 1918

11. *Influence of surgery on the outcome of the present war.*

162. Barnard, F. S.

A discussion of some of the steps being taken to conserve man power in the armies of the various combatants.

12. *Forceps in occipito-posterior position.* 168. Stiles, W. H.

Advocates Scanzoni's maneuver, rotating to an occipito-anterior position by forceps on the pelvic floor.

13. *Correlate snap shots.* 170. Peck, G. B.

14. *Treatment of paresis.* 175. Wilcox, F. S.

The author makes the plausible statement that 99 per cent. of patients with general paresis die, the remaining 1 per cent. representing mistakes in diagnosis.

15. *Thuja for tubercular subjects.* 178. Chaney, E. N.

The author seems more interested in detailing the terrible (?) effects of vaccination as predisposing to tuberculosis than in giving the indications for thuja.

16. *Looking backward a bit.* 181. Fisher, C. E.

17. *The Chicago educational meetings.* 184. Hill, S. A.

18. *Surgical treatment of gastro-ptosis.* 186. Grove, C. E.

The author prefers medical treatment, as surgery is unsatisfactory in this condition.

19. *Pasteurization in corneal ulcer.* 189. Kellog, F. F.

Discussion of the treatment of corneal ulcer by holding a hot metal body near the ulcer. This has the advantage over cauterization in that scar tissue does not result.

20. *A few cases of uveitis.* 193. Palmer, H. C.

21. *Care of the perineum at childbirth.* 196. Johnson, R. B.

The author suggests delivering the body toward the mother's abdomen rather than toward the back. In this way less pressure is brought on the perineum.

22. *Report of a case.* 198. Salisbury, C. S.

Report of a successful case of Cæsarian section following prolonged vaginal manipulation.

Iowa Homœopathic Journal, April, 1918

23. *Abdominal adhesions.* 9. Titzell, Frank C.

In addition to stopping all oozing during an operation the writer has the patient change position frequently in bed, keeping the bowels moving moderately. This procedure is recommended to prevent adhesions.

24. *Management of labor, complicated by serious cardiac lesions.* 9. Cogswell, J. W.

The importance of rapid delivery by manual dilatation or

deep cervical incisions and forceps extraction is urged. Abdominal pressure should be exerted during extraction to prevent sudden decrease in blood pressure.

25. *Phosphorus*. 12. Hudson, T. H.

26. *Cæsarian section: report of a case*. 19. Lawton, C. V.

DIAGNOSIS AND THERAPEUTICS

The cause of lumbar puncture headache. MacRobert, R. G., Jour. Am. Med. Ass., 1918, lxx, 1350.

The author advances an ingenuous and plausible theoretical explanation regarding the cause of headache following lumbar puncture. It is well known that such headaches are almost immediately relieved in a recumbent position, and that they appear when upright posture is assumed, showing that they are entirely mechanical in origin. Neither the amount of fluid withdrawn nor the practice of keeping the patient lying down for twenty-four hours after puncture seem to influence the appearance of headache. M. believes that the cause is a leakage of spinal fluid through the patent puncture hole in the dura and arachnoid. If no headache occurs this is due to an overlapping of the hole in the dura by a portion of intact arachnoid in which the puncture is at a slightly lower or higher level or lateral to the dural puncture; if there is headache, the hole in the loose arachnoid is pulled through the dural hole when the needle is withdrawn and results in the formation of an opening through which the spinal fluid escapes into the epidural tissue until healing of the puncture wound takes place. This continued leakage removes the cushion of fluid at the base of the brain; the brain settles down upon the basilar plexus of veins, obstructs venous blood flow, causes cerebral stasis and thereby pain.

(As corroborative evidence of the author's theory it may be mentioned that the reviewer has found headache apparently somewhat more frequent after punctures done with needles of large calibre than when finer needles were used. The larger needles, of course, make larger holes that are more likely to remain patent. H. U.)

The liver and its cirrheses. Mayo, W. J., Jour. Am. Med. Ass., 1918, lxx, 1361.

There are two types of hepatic cirrhosis:

" 1. Portal cirrhosis, in which the chronic irritants, probably biochemical substances, are introduced through the portal vein, and in which circulatory disturbances are the most prominent clinical features, causing gastric hæmorrhages, and especially ascites. Jaundice is seldom present and only as a terminal symptom.

" 2. Biliary cirrhosis, in which jaundice is clinically the chief

symptom, ascites being absent or, if present, being a terminal condition, with the evidence pointing to an infectious cause.

"In portal cirrhosis the connective tissue is introduced about the radicles of the portal vein, and in biliary cirrhosis about the bile ducts."

In bile cirrhosis the liver is always enlarged.

The relation of alcohol to cirrhosis seems to be exaggerated, because cirrhosis not infrequently occurs in young abstainers.

Splenectomy is of great benefit in portal cirrhosis, particularly when the spleen is enlarged, probably because the excessive amount of blood brought to the liver by the enlarged splenic vein and resulting in the hepatic hyperæmia is sidetracked by the operation. Removal of an enlarged spleen may also be of benefit in biliary cirrhosis, not so much perhaps for the reason operative in the portal type as because the spleen seems to strain bacteria from the blood stream and sends them to the liver for destruction; thus being a continuous source of chronic hepatic infection.

Feeding in hyperemesis gravidarum. Bacon, C. S., Jour. Am. Med. Ass., 1918, lxx, 1750.

The cause of vomiting in pregnancy is probably manifold, there being a neurotic factor as well as peripheral irritation from the uterus in addition to a possible toxic element which, however, has not yet been definitely determined, either laboratorially or clinically.

In treating pregnancy emesis it is important to prevent danger from starvation or toxæmia. Feeding should be non-oral, and the best method to accomplish this is rectal alimentation, because all essential food elements may be supplied in this manner. Proteids should be given in the form of amino acids and peptones derived from artificially digested meat or milk; carbohydrates must be given in the form of absorbable monosaccharid, preferably glucose, because sugar and starch digestion does not occur in the colon; rectal fat absorption is doubtful and fats should therefore be omitted. Solutions of vitamins from the pancreas or other source should always be added if rectal feeding is to be continued for a long time, because Walker has suggested that the toxic element may be a deficiency in vitamins.

Alcohol is valuable as a food but is harmful if given to excess. In 5 per cent solution and in quantities not exceeding 100 grams a day it is practically all consumed and harmless and should be included in the rectal diet. Calcium salts also should be added, and the usual presence of acidosis indicates sodium bicarbonate.

The solution entering the rectum should be at body temperature. This is obtained by warming the distal end of the rectal tube between heated sandbags.

A large cleansing enema of at least one liter should be given daily, at 7 or 8 in the morning. The nutrient enema of 500 cc. should begin at about 9 A.M., and should consume about two hours at the rate of flow of one drop a second. It should be repeated at 2 and 7 P.M.

Its composition should be about as follows: glucose, 50 gms.; alcohol, 50 gms.; calcium chlorid, 0.2 gms.; sodium bicarbonate, 3 gms.; sodium chlorid or bromid, 4 gms.; vitamin in sufficient quantities; distilled water to 1000 cc. This mixture has an energy value of 550 calories. In two or three days after it is given, the retching stops, thirst disappears, and the patient is fairly comfortable.

Before beginning oral feeding, lavage of the stomach is often desirable. The food best to begin with is some form of milk to which egg albumin may soon be added. Rectal feeding is gradually discontinued and not stopped until gastric feeding is fully established. Relapses may occur as late as the eighteenth week, necessitating surveillance of the patient during this time. In a patient under control, the induction of abortion is practically never required.

A study of four hundred post-mortem Wassermann reactions.

Graves, S., Jour. Am. Med. Ass., 1918, lxx, 1751.

Out of a series of six thousand Wassermann reactions four hundred were done on blood obtained at necropsy. As a result it is concluded that this reaction, made on *post mortem* blood, is practically as reliable a test for syphilis as when done *ante mortem*.

A clinical study of 150 cases of bronchial asthma. Rackeman, F. M., Bost. Med. & Surg. Jour., 1918, clxxviii, 770.

Intradermal tests were made with various pollens, the sera of domestic animals, the dander of horse, cat, and dog, and with proteids derived from several foods. These tests and the patients' histories permitted grouping of 80 per cent. of the cases into those due to extrinsic causes, comprising 28 per cent., and those due to intrinsic causes, comprising 53 per cent. Among the first group were found 24 cases sensitive to pollens, 12 of which were definitely due to pollen proteins and 12 had asthma at other times than the pollen season. Sixteen cases reacted positively to horse dander and gave a history of being susceptible to it.

BOOK REVIEW

Interpretation of Dental and Maxillary Rontgenograms. Robert H. Ivy, M.D., D.D.S.; Major, Medical Reserve Corps, U. S. A.; Associate Surgeon, Columbia Hospital, Milwaukee; Instructor in Oral Surgery, University of Pennsylvania. Published by C. V. Mosby Co., St. Louis. Price \$2.50.

In this volume the author has given the medical and dental professions the information necessary for making an intelligent diagnosis of pathologic conditions about the teeth and maxillary bones by means of Röntgenograms. Special attention is given to the anatomy and pathology of the teeth, with illustrations from reproductions that correspond with the original negatives, showing varying degrees of abnormal and disease conditions. Description of what is seen on each odontogram can be easily demonstrated. The book is well written and instructive and should be of great service to both professions.

G. H. O.

OBITUARY**John Hillmann Bennett**

Dr. John H. Bennett, president of the Rhode Island State Board of Health, died on Wednesday morning, June 5, at his home in Pawtucket, R. I., at the age of 49. Dr. Bennett was born in New Bedford, Mass., December 13, 1869. He graduated from Boston University School of Medicine in 1891, and served as intern at the Boston City Hospital. He had for several terms been president of the Rhode Island Medical Association, and was for some years a member of the Rhode Island State Board of Health. At the time of his death he was president of that body, acting superintendent of the Pawtucket Board of Health, president of the Massachusetts Surgical and Gynecological Society, member of the American Institute of Homœopathy, of the Rhode Island and Massachusetts Homœopathic Medical Societies, and of the American and Rhode Island Medical Associations.

Alice G. Coleman

Miss Alice G. Coleman, Ph.D., 27 years old, daughter of Dr. E. B. Coleman of Nantucket, Mass., died April 7 at the Massachusetts Homœopathic Hospital after an operation for duodenal ulcer. Miss Coleman was a graduate of Massachusetts College of Pharmacy and had held the position of pharmacist at Medfield State Hospital for four years.

SOCIETY MEETINGS**CALIFORNIA STATE HOMŒOPATHIC MEDICAL SOCIETY**

The forty-second annual session of this society was held at Arrowhead Springs, San Bernardino, Cal., on Tuesday, Wednesday, and Thursday, June 4-6, with the following program:

Tuesday

- 2.00 P.M. Meeting called to order;
Communications from the President;
Reading and correction of the minutes of the previous meeting;
Filling of vacancies in Board of Censors;
Nominations of candidates for membership;
Report of secretary;
Report of directors;
Reports of committees appointed at previous meeting;
Report of censors;
Election of permanent, corresponding and honorary members;
Report of Committee on Legislation;

Reading of communications from members and persons not members;
 Motions, resolutions, etc.;
 Nomination and election of officers.

- 3.30 P.M. Necrology report.
 4.00 P.M. Bureau of Medical Education and Statistics.
 5.00 P.M. Bureau of Public Health and Hygiene.
 8.15 P.M. Address of Welcome by W. H. Stiles, M.D., Chairman Committee on Arrangements.
 8.30 P.M. Address by the President, W. E. Nichols, M.D.
 9.00 P.M. Bureau of Materia Medica and Homœopathy.
 10.00 P.M. Informal Reception to the Society given by the "Meissen of California."

Wednesday

- 9.00 A.M. Bureau of Anatomy, Physiology, and Pathology.
 10.00 A.M. Bureau of Ophthalmology, Otology and Laryngology.
 11.00 A.M. Bureau of Clinical Medicine.
 12.30 P.M. Luncheon.
 2.00 P.M. Bureau of Surgery.
 3.00 P.M. Bureau of Gynæcology.
 4.00 P.M. Bureau of Obstetrics.
 5.00 P.M. Bureau of Pædology.
 7.30 P.M. Patriotic Banquet.

Thursday

- 9.00 A.M. Automobile ride through Redlands' and Riverside's orange groves, with their beautiful homes, to the Southern California State Hospital at Patton.
 10.00 A.M. Inspection of the Southern California State Hospital.
 12.00 M. Luncheon.
 1.30 P.M. Bureau of Mental and Nervous Diseases.
 3.30 P.M. Unfinished business.
 Adjournment.

Medical Education and Statistics

Charles B. Pinkham, M.D., Chairman

Medical legislation. Charles B. Pinkham, M.D., San Francisco.

Medical education and its possibilities. J. W. Ward, M.D., San Francisco.

Liberty. Charles Theo. Cutting, M.D., San Francisco.

Vivisection or anti-vivisection. Guy E. Manning, M.D., San Francisco.

Public Health and Hygiene

Guy E. Manning, M.D., Chairman

Psycho-neuroses of the war. O. G. Freyermuth, M.D., San Francisco.

The Government's stand on venereal diseases. Guy E. Manning, M.D., San Francisco.

Materia Medica and Homœopathy

William Boericke, M.D., Chairman

Over the top in homœopathy. S. Anson Hill, M.D., San Francisco.

A place for drugs in the treatment of disease. George H. Marin, M.D., Pasadena.

A materia medica study. Joseph S. Brooks, M.D., San Francisco.

Homœopathic tonics. Guy E. Manning, M.D., San Francisco.

Anatomy, Physiology, and Pathology

Charles S. Salisbury, M.D., Chairman

Pathology of narcotism. Bradford Fox, M.D., Pasadena.

Gross pathology of cancer. F. S. Barnard, M.D., Los Angeles.

Pathology of gonorrhœal prostatitis. Horace E. Warner, M.D., Los Angeles.

Ophthalmology, Otology, and Laryngology

Francis B. Kellogg, M.D., Chairman

Nasal sinus inflammation. Philip Rice, M.D., San Francisco.

Iridotaxis in glaucoma, with two cases. Francis B. Kellogg, M.D., Los Angeles.

Clinical Medicine

T. C. Low, M.D., Chairman

Hydro-therapy in pneumonia. L. K. Van Allen, M.D., Ukiah.
Radio-activity in therapeutics. A. C. Cowperthwaite, M.D., Los Angeles.
Chromo-therapeutics. George Starr White, M.D., Los Angeles.
The present status of serum therapy. Hyman Lischner, M.D., San Diego.
A day's work. Willella Howe Waffle, M.D., Santa Ana.

Surgery

A. S. Larkey, M.D., Chairman

Gall bladder infections. E. P. Wallace, M.D., Pomona.
Bone transplant for cure of malignant disease. R. F. Tomlinson, M.D., San Francisco.
The knee: its internal derangements. J. W. Ward, M.D., San Francisco.

Gynæcology

Florence N. Ward, M.D., Chairman

Cystocele: cure and treatment. F. S. Barnard, M.D., Los Angeles.
The retroverted uterus. Marian McAuley, M.D., Petaluma.
Cæsarean section (report of fifty cases without a death). Florence N. Ward, M.D., San Francisco.

Obstetrics

Alice H. Anderson, M.D., Chairman

Hydatiform mole, with report of a case. Charles S. Salisbury, M.D., Los Angeles.
Some observations on obstetrics. Florella Estes, M.D., and J. W. Coolidge, M.D., Los Angeles.

Pædology

H. L. Shepherd, M.D., Chairman

The child and the home. Alice G. H. Anderson, M.D., Los Angeles.
The child and the school. Lewis P. Crucher, M.D., Long Beach.
The child and the family happiness. Hovey L. Shepherd, M.D., Los Angeles.

Mental and Nervous Diseases

John A. Reily, M.D., Chairman

(This bureau was held at the Southern California State Hospital.)

Mental diagnosis, with clinical cases. G. M. Webster, M.D., Patton.
Hydro-therapy and homœopathic treatment. Harry S. Blossom, M.D., Patton.

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Second Vice-President, Laura B. Hurd, M.D., San Francisco.
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NEW HAMPSHIRE HOMŒOPATHIC MEDICAL SOCIETY

The Annual Meeting was held at Laconia Tavern, Laconia, N. H., June 19, 1915. Papers were presented by Dr. De Witt G. Wilcox of Newton, Mass., and Dr. A. G. Howard of Boston.

New officers: President, E. W. Coates, M.D., Concord; Secretary, Martha I. Boger, M.D., Portsmouth; Treasurer, Herman Christophe, M.D., Manchester.

VERMONT HOMŒOPATHIC MEDICAL SOCIETY

The 68th Annual Meeting of the Vermont Homœopathic Medical Society was held in Montpelier, May 29. In the absence of President Hodsdon, Dr. E. B. Clift of Fair Haven was elected President *pro tempore*.

The officers of the society for the coming year are as follows:

President, Edward Kirkland, Bellows Falls.

Vice-President, G. E. Morgan, Burlington.

Secretary, Geo. I. Forbes, Burlington.

Treasurer, F. E. Steele, Montpelier.

The principal feature of the meeting was a paper on "Gall-bladder Infections," by Dr. DeWitt G. Wilcox of Boston. Dr. Wilcox also addressed the Society on the furtherance of the plans of federation of the State Societies with the American Institute. Dr. Edward Kirkland presented a paper entitled "Some Experiences by the Way."

The next meeting will be held on the fourth Wednesday in May, 1919, at such place as may be selected by Dr. Sam Sparhawk and Dr. Geo. I. Forbes.

Of the members of the Society who have joined the United States Medical Reserve Corps, Dr. C. E. Libbey is at Camp Taylor, Dr. F. H. Everett at Camp Hancock, and Dr. W. O. Hutchinson at Fort Ogelthorpe. Dr. W. D. Hodsdon, president of the society, was away at the time of the meeting, taking his examinations for admission to the service. Dr. G. G. Hall is on the inactive list. Dr. Sam Sparhawk volunteered but was rejected for physical disability.

"CHILD CARE"

Things every mother must know if the Nation is to meet the health needs of its children as indicated by the draft and still further revealed by the weighing and measuring test are made available today by the Children's Bureau of the United States Department of Labor in its new bulletin on Child Care, prepared by Mrs. Max West.

A third of the men examined for military service in the first draft were found to have physical defects which rendered them unfit. Many of these defects might have been overcome if they had been recognized and dealt with in early childhood; the period between two and six is often the time when such defects make their first appearance. "Child Care" has been prepared in the hope that it would enable mothers to understand and recognize symptoms which indicate the need of special care, and also to give mothers the better understanding of the simple laws of hygiene through which it may be possible to prevent the development of such defects at all. It will be especially useful to thousands of mothers who have learned by the weighing and measuring test of defects and weaknesses in their children which need particular attention.

"Child Care" deals with children from two to six years old and is the third issue in the series which began with "Prenatal Care" and "Infant Care." It contains simple rules of health and hygiene, including carefully compiled directions about proper food, suitable clothing, suggestions for play and exercise, for discipline and training. It gives simple menus for young children. A list of books on child care and training is added.

IMPRESSIONS GAINED BY MEMBERS OF THE OFFICIAL BRITISH MEDICAL MISSION DURING THEIR VISIT TO AMERICA

Dr. Franklin Martin, Member of the Advisory Commission of the Council of National Defense and Chairman of the Council's General Medical Board, authorizes the following:

After a tour of many American cities, which enabled them to meet and address representative groups of American physicians and surgeons, Sir James Mackenzie, noted heart specialist of Edinburgh and London; Col. Sir William Arbuthnot Lane, veteran surgeon of the Zulu, Egyptian and Boer wars, and authority on bone surgery, and Col. Herbert Alexander Bruce, of Toronto, now consulting surgeon to the British armies in France, comprising the medical mission sent by the British Government to this country have returned to Great Britain.

"In the travels of our mission through America, we have been to many centers of war activity here," said Colonel Bruce, "and we will have a great deal to say when we get home about the marvelous and effective program which you are carrying out on so colossal a scale. I want to say that it has heartened us very much, and that we know it will hearten the people at home when we report there."

The visitors first came to Washington to pay their respects to Surgeon General Gorgas. Thence they departed for Cincinnati to attend the annual meeting of the American Surgical Association. At a special patriotic session in the Hughes High School, Cincinnati, June 6, under the auspices of the Ohio State Committee, Medical Section, Council of National Defense, Colonel Bruce de-

scribed the British system of caring for the wounded. He stated that the British have forty hospital trains in France fully equipped with doctors and nurses, each train having a capacity of 600 beds—the whole constituting a mobile hospital of 24,000 bed capacity. He paid tribute to the heroism of the field hospital service and to the American surgeons and physicians in that service.

Sir Arbuthnot Lane told of the treatment of thousands of soldiers wounded in the face, some with jaws gone, others with cheeks or noses shot away. Colonel Lane is consulting surgeon at the Queen's Hospital at Sidcup, where this facial reconstruction or plastic surgery is the special work. "The man who loses an arm, a leg, or is injured in the body, can go back to the bosom of his family, but the man whose face is distorted, no matter how much his family may love and cherish him, suffers most," said Sir Arbuthnot. "So I began to isolate these cases, beginning with five doctors. This start has developed into a magnificent hospital with 750 men, and we are literally making new faces. We have enlisted the services of the best dentists, sculptors, wax workers, and surgeons, and developed specialists in transferring bones from other parts of the body to the face. If you could see how happy these men are, it would be a lasting satisfaction to know their gratitude."

Sir James Mackenzie told of some of the heart cases referred to him, "instances of irritable heart," he said, "are due to general weakening of the body through illness in the trenches." Outdoor exercise and sports are curative agencies, he said.

Sir James, in speaking of the examination of recruits, said, "The tests of a man's fitness as a soldier should depend upon what he has been doing and what he is able to do. A young fellow was sent to me because his heart was supposed to be bad. I asked him what he had been before he entered the service. He said he had been a butcher. I asked him if he had been able to carry the carcass of a sheep upstairs and whether such work had been a regular part of his duties. He said that he had been accustomed to doing exactly that, and frequently, and without physical discomfort. I said: 'I do not need to examine your heart' If you can do work like that you are certainly fit.' Too many men are rejected because of alleged defects which are more apparent than real."

It was after this meeting that Colonel Lane asked why women are not eligible to the Medical Reserve Corps. He said that he had been instrumental in having them admitted to the Medical Service in Great Britain.

The noted British surgeons were guests at the monthly meeting of the General Medical Board of the Council of National Defense and at the meeting of the State and County Committees of the Medical Section of the Council, held Sunday, June 9, in Chicago. At this time Colonel Bruce took special pains to speak of the work of American surgeons, many of whom are members of the General Medical Board, who are doing most important work at the front—Drs. Frederic A. Besley, George W. Crile, J. M. T. Finney, Charles H. Peck, William S. Thayer, Harvey Cushing, George E. Brewer, Richard H. H. Harte and others. "These men went over as medical men—and stayed as soldiers, for they operate at the front lines amid bursting shells and are continually under fire. While I was in France before leaving to come here on this mission, Sir Arthur Sloggett of the British Medical Service sent for me and said he wished me to take a message to America. This is what he said: 'I appreciate the very excellent work which American doctors and American nurses are doing in the British service.' He said they had been a very great help and an inspiration to the service. In fact, they will never forget the American doctors and nurses. He recommended a large number of your medical officers at the front for the same honors that he had recommended for those in his own service, but owing to the regulation of your Government they were not able to accept. On a recent trip to the front, I met also a number of your soldiers, who gave me the opinion when one looked in their faces that nothing would stop them, and you know what they did when they first encountered the Hun quite recently. I don't think you need to worry about the enemy getting a few feet of territory. One or the other side can get some ground if they pay a sufficient price for it, and during the offensive of the 21st of March, and subsequent dates, the Hun paid a very large price for the territory which he took. Even if we should be driven to the sea, and if we have to take to the boats and go to England, this battle is not over. 'We will make it so that ships sailing through the Irish sea sail a sea boiling with submarines,' said one of the German leaders in

February, 1917. To which England replied: 'Make it boil like the caldrons of hell, and we will sail just the same.' We of Canada and you of the United States are of the same race and blood. Now that we are comrades in arms, we have a still further bond uniting us. I have difficulty in appreciating the difference between Canada and America. I can tell you the difference between England and America. England says: 'As it was in the beginning, is now, and ever shall be. Amen.' America says: 'As it was in the beginning, is now, and by gosh there's got to be a change.' That spirit now represents the opinion of England as well as that of our allied nations.

"The German chancellor when America entered this war very sneeringly remarked that the weight you would throw into the scale would not be greater than that of a straw. To this Mr. Punch replied that he quite agreed with the statement of the German chancellor, but he would like to point out and make the prediction that it would be the last straw which would break the camel's back."

Sir James Mackenzie praised highly the classification of American surgeons as reported by Dr. William J. Mayo for the Committee on Surgery of the General Medical Board. The class indexing and coding of the more than 20,000 American physicians was termed ideal by Sir James, who said that the United States is avoiding the mistakes made by England. "England," he said, "was precluded from such a systematic course by the suddenness with which the war came."

Colonel Lane told of the enormous help given by American surgeons who came over long before America's entry into the war, saying that he had been asked to speak about the difficulty of getting medical men for the military service. He said: "The difficulty with us has been to keep them out. I do not suppose you are any different from our men. I have always understood that the medical people in America were the keenest people in the world. Our people have gone without a word. They gave up their practices, their futures, their wives and their children. They did not ask: 'How much are we going to be paid?' or 'What is going to become of our families?' they came at once to the aid of their country. I do not think you will have to ask the medical men to come. I think the difficulty, my friends, will be keeping them away."

After their attendance upon the sessions of the American Medical Association Convention, the visitors made a trip to Rochester, Minnesota, as guests of the Mayo brothers. In Boston, on June 19, the visitors spoke at sessions of the Massachusetts Medical Society in the Boston Medical Library. After this, came visits to Detroit, Cleveland, Pittsburgh, Philadelphia, and New York City, accompanied by Dr. Franklin Martin, Member of the Advisory Commission of the Council of National Defense and Chairman of the General Medical Board, and Major Henry D. Jump of the General Medical Board, arrangements being made in advance for them to speak at meetings held under the joint auspices of the State Committees, Medical Section, Council of National Defense and the local medical societies. Upon all these occasions the visitors urged the need of physicians at the front, and warmly seconded the efforts of the State Committees, and of Dr. Martin and Major Jump, in appealing to the doctors to enroll in the Medical Reserve Corps, Naval Reserve Force and Volunteer Medical Service Corps.

In Detroit, on June 21, the visitors were shown about the city and visited the Packard and Ford plants. In the evening at a big meeting in the new Elks Temple Auditorium, Colonel Bruce spoke of the work of Detroit surgeons at the front, including Drs. Angus McLean, Burt R. Shurly, Theodore A. McGraw, Harry N. Torrey, William A. Spitzley, Frank B. Walker, Louis J. Hirschman, Ernest K. Cullen, and also Dr. John R. Sherrick, a Michigan physician who has been awarded the military cross for gallantry.

Colonel Bruce frankly criticised Americans for eating too freely, saying that the menu cards in hotels and restaurants astonish foreigners. He urged that white flour and meat be conserved to a greater extent, and that the use of motor cars for pleasure be cut down.

Colonel Lane urged that instead of being lulled into security by the apparent success of war-winning work, America should forge ahead to greater efforts.

From Detroit the party went to Cleveland by boat. After a dinner at the Union Club, there was a largely attended meeting at the Chamber of Commerce, over which Dr. C. A. Hamann presided. In addition to the talks by the visitors, Dr. William E. Lower of Cleveland, who recently returned after a year's service with the Lakeside Unit at the front, also spoke.

Thence to Pittsburgh, where Dr. J. J. Buchanan, Chairman of the State Committee, Medical Section, Council of National Defense, and his coadjutors, had made such preparations for the meeting that two thousand persons thronged Carnegie Music Hall for the meeting Sunday night, June 23.

"When I left England I felt certain that we should win the war sometime," said Colonel Lane. "Since I have been in this country I have become more certain, and I have come to believe that we shall win it soon." Colonel Lane spoke with enthusiasm of the shipbuilding activities he had seen on this side. He regarded as equally efficient the medical organization work in Washington under Surgeon General Gorgas and Dr. Franklin Martin. "You can make a soldier in four months for the sea, earth, or air," he said, "but it takes seven years to make a doctor, and after we get him he must learn his job. It makes a vast difference in the work of a hospital whether or not it is organized for efficiency, and this depends largely upon the fitness of the physicians for their particular work."

Colonel Bruce said that the work of the medical men in the armies had stamped out typhus and typhoid fever, there being when he left France only twenty-seven cases of typhoid fever in an army of two million men. He told of an experience he had had in a hospital bombed by the Germans, adding that sixteen wounded German prisoners had been killed by one of the bombs dropped.

In Philadelphia, the visitors were the guests not only of the physicians, but of the city as well. Forty prominent men, including city officials and leaders in various activities, attended the dinner in their honor at the Bellevue-Stratford Monday night, June 24. During the day the visitors had been taken to Cramp's Shipyards, the plant of the International Shipbuilding Corporation at Hog Island, and the Eddystone plant of the Remington Arms Company. The meeting at 9 o'clock in the Bellevue-Stratford ballroom was presided over by Dr. Edward Martin of Philadelphia. Colonel Lane said: "When America sent Dr. Alexis Carrel to Europe, she did more than if she had sent ammunition, guns and food. His discovery has worked miracles among the wounded of the Allies." Colonel Lane also praised highly the other doctors and nurses from the United States.

Sir James Mackenzie asserted that England is not in danger of starvation. "Nor are there any signs of famine at present," he said. "Up to the last harvest, food was scarce, and we had a hard time to get the staples of life, especially cheese and potatoes. Now things are running smoothly." Sir James urged that efforts be made to counteract German propaganda in Russia.

Colonel Bruce asserted that the imaginary boundary line between Canada and the United States had been wiped out, and that the present war has cemented the relations between the countries. Speaking of England's independence of Germany, he said: "We make our own dyes, and we do not bother or even give a thought about the supply of German potash. Five thousand ships enter and leave British ports each week. We have loaned 600 ships to France and 400 to Italy. Before the war less than 200,000 women were engaged in work; now the number exceeds one million, in more than 400 branches of munitions manufacture. Social distinctions have been leveled in the utter democracy of overalls and caps."

On the eve of their departure, the distinguished visitors were entertained at a dinner given them by the New York doctors at the Metropolitan Club.

PERSONAL AND GENERAL ITEMS

Dr. Herbert E. Maynard of 80 Church Street, Winchester, Mass., has been commissioned Captain in the United States Medical Reserves and has gone to Camp Meade, Maryland, for active service in the base hospital. This is Dr. Maynard's second enlistment; he served in base hospitals in Europe last year under the British government, as surgeon attached to the Royal Army Medical Corps.

U. S. Army Base Hospital No. 44 (Mass. Homœopathic Hosp.) embarked for Europe in the early part of July. Mail intended for members of its personnel should be addressed as follows:

Lt. John Doe, M.R.C.,
U. S. Army Base Hospital 44,
American Expeditionary Forces,
via New York.

Dr. Frederick M. Sears of Dorchester, Mass., has accepted a commission in the United States Naval Reserve and has been ordered to Newport, R. I. During his absence his practice will be in charge of Dr. A. L. Shadman, assisted by Dr. G. Frank Blood.

Dr. John Maxson Wilcox, B.U.S.M. 1918, son of Dr. and Mrs. DeWitt G. Wilcox, was married on Saturday, June 29, to Miss Freda Walker, daughter of Ex-Commissioner of the Department of Animal Industry and Mrs. Fred F. Walker.

The Carson C. Peck Memorial Hospital, Brooklyn, N. Y., will open its doors about the first of October, 1918. Its capacity is eighty beds — private rooms and private wards only. It is the last word in hospital construction and equipment. It is the gift of Mrs. Carson C. Peck as a memorial to her husband, and was given as an endowment through the kind offices of Dr. Magnus Tate Hopper. There is a vacancy on the intern staff, beginning with the opening of the institution, and applicants for the position may write to Dr. R. D. Lloyd, 450 Ninth Street, Brooklyn, N. Y.

Lieut. Winfred Overholser, M.R.C., has been transferred from Camp Upton, N. Y., to Camp Merritt, N. J.

Dr. Charles T. Howard announces the removal of his office on June the fifteenth to 510 Commonwealth Avenue, Boston. For the summer months he will reside at Hingham, Mass., but will be at the Massachusetts Homœopathic Hospital each forenoon.

Dr. Jacob J. Golub of Dorchester, B.U.S.M. 1915, was appointed acting assistant surgeon, U. S. Public Health Service, and is stationed at the Immigration Station, Long Wharf, Boston.

Dr. David Linn Edsall, since 1912 Jackson Professor of Clinical Medicine in the Harvard Medical School, has been appointed dean of that institution, succeeding Dr. Edward Hickling Bradford, and will take up his new task September 1.

Lieut. Harold L. Leland, M.R.C., now in Europe with U. S. Army Base Hospital 44, was married on May 13 to Miss Sally M. Clark of Boston.

The Vermont State examinations of candidates for license to practice medicine were held in Burlington, June 10-12. There were no homœopathic candidates.

Dr. Charles A. Eaton removed his office on June first to 510 Commonwealth Avenue, Boston.

Dr. Frances Low has moved from Providence to Little Compton, R. I.

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ORIGINAL COMMUNICATIONS

A STUDY BASED UPON FOURTEEN HUNDRED SURGICAL RECTAL CASES *

FREDERICK W. HALSEY, M.D., F.A.C.S., Boston, Mass.

Associate Professor of Diseases of the Rectum in Boston University School of Medicine; Consultant in Rectal Diseases to the Massachusetts Homœopathic Hospital.

In tabulating this series of rectal cases, I have thought best to exclude a service of about twenty years' dispensary work in the Out-Patient Department of the Massachusetts Homœopathic Hospital, on account of the difficulty of collecting accurate records of cases seen there, especially as regards end results. I shall, however, draw freely upon experience gained by me in this service, particularly in the discussion of various methods of treatment.

Of the whole number of cases seen, very nearly half have been hæmorrhoidal. This confirms the reports of most observers as to the frequency of hæmorrhoidal trouble. The majority of physicians will agree with the statement that only a small number of patients afflicted with hæmorrhoids submit to operative measures; they are content to use palliative means from time to time as occasion requires. It follows as a natural result that only the more serious cases find their way to the specialist in rectal diseases. My records confirm these conclusions.

In a large number of the cases operated upon, it was found that some other pathological condition in addition to the rectal one required attention. The complicating abnormality involved any of the following organs: appendix or other portion of intestinal tract, uterus, Fallopian tubes, vagina, clitoris, perineum. Urethral stricture, irritability and enlargement of the prostate, and phimosis were sometimes found in male patients.

* Read before the Massachusetts Surgical and Gynæcological Society, Boston, May 15, 1918.

Forty-nine cases required laparotomy in order that diseased conditions in the abdomen should receive proper attention. A point worthy of note is that it is the exception, rather than the rule, to find hæmorrhoids uncomplicated by other rectal disorders, such as polypoids, pockets and papillæ, ulceration, fistulæ, etc.; conversely, in any or all of these pathological conditions we expect to find hæmorrhoids.

One of the most gratifying points in this series, particularly in view of the fact that it included some very serious operative cases, has been the low mortality. Whether this is due to careful asepsis followed as a routine practice, or to unusually good luck, it is impossible to determine. Only two deaths have occurred before patients left my hands. One of these was in a case afflicted with hæmorrhoids, and was probably due to embolism. Death occurred in thirteen days after the operation as the patient was getting ready to go home. He was very anæmic because of daily loss of blood continuing over a long period of time. While his death was unquestionably hastened by operation, he would, without doubt, have died in a short time from blood depletion due to the persistent hæmorrhage. The second case was from systemic poisoning and occurred three days after a large ischio-rectal abscess had been opened. Whether the patient could have been saved is an open question. A large amount of pus had been absorbed before the abscess was evacuated. By advice of council, thorough curetting with sharp curette was done after a generous opening had been secured. In my judgment this was a mistake because a large area of absorbing tissue was thus freshened up and put in the most favorable condition for absorption of toxic material. Had I been content to open up freely and to wash out gently, using the fingers to break up deeper pockets, the result might have been different. This, at least, is my belief, in the light of subsequent experience.

Regarding the conservative treatment of hæmorrhoids by injection methods, I have little to add to already published reports. Such cases are not included in this list. The methods are not fraught with serious menace to life if certain precautions are observed. Much relief can often be given, occasionally lasting several years. Realizing that such procedures are not radical ones, although I have used them in many hundreds of cases, I always accord them second place in my recommendation and only resort to them when the patient refuses an operation under a general anæsthetic. For these very timid people, by the use of one of the many good local anæsthetics, hæmorrhoids may be removed either singly or *en masse*, by transfixion, occlusion, or ligation. The convalescence is prolonged, more

pain and tenderness follows, and the methods have little to recommend them other than the fact that they cater to the prejudices of the patient.

Of cases of hæmorrhoids operated on under general anæsthesia, preferably nitrous oxid gas followed by ether or oxygen, the large majority were done by either excision or the clamp and cautery. For a time, many years ago, on my return from St. Marks, London, following the custom used there almost universally, I tried out the ligature. While it is probably as radical as any method, and while the records of cases treated by it show a low mortality, yet a great deal of tissue is unnecessarily sacrificed if the operator is bold, whereas in the hands of the timid surgeon fully one third of the hæmorrhoid is left. Furthermore, a great deal of pain follows this method in spite of the promise to the contrary. For these reasons I rarely resort to it now. I find that excision or the clamp and cautery method are applicable in a large majority of my cases. It is well, however, to keep an open mind when selecting the method suitable for each case; one should not have any pet operation which is used to the exclusion of all others. Personally, I always wait until my case is on the table before me, fully dilated, before deciding on the method most suitable for it.

Now, let me say a word regarding preparation. In a late number of the *Proctologist* I find that one surgeon at least has discarded part of what most of us have always considered a prerequisite of rectal operations: he does not approve of the purge the night before, but is content with an enema or possibly a half dozen of them in the morning. This practice may be best for his cases, and he may be absolutely right in doing it, but he must forgive me if I do not follow him. I prefer to feel reasonably sure that both colon and cœcum are as empty as I can get them. It is my custom to give one half or one ounce of castor oil, preferably in the form of laxol, the night before, following this in early morning by a liberal enema. In addition I usually spend considerable time in flushing at the time of the operation, and even then it is not an unusual thing to see liquid fæces pour over the field of operation. If this happens before the stitches have been taken I consider it fortunate; it simply means more flushing. Like bleeding, it is better that it should occur in the operator's presence than afterwards. Adopting this plan I am rarely troubled with a desire on the part of the patient for a movement until I am ready for him to have one, which is usually about the fourth day after the operation. This is accomplished by another dose of the laxative. If the patient has been kept on strictly liquid diet, this first movement causes little or no pain. A more generous diet may be allowed from

now on, and if a mild laxative is given every other day, progress will be unimpeded. I have tried many variations of this routine, but no other plan has given me such good results.

Another writer has recently objected to dilation, claiming that it bruises the tissues and does more harm than good. I agree with him if by dilation he means actual rupture of the fibers of the sphincter, but proper dilation can be done without any such bruising. I have always taught and practiced the greatest care and gentleness in this important step. A certain amount of dilating is good for most rectal cases, and a fair amount you must have or you cannot operate successfully.

Plugging the rectum with gauze or other material in sufficient quantity to insure dryness, later pulling it out over the operative field, particularly after a clamp and cautery operation, never seemed reasonable to me.

Given a case of hæmorrhoids, how shall we decide which operation is preferable? My rules are few and simple. If the patient is not over sixty-five years of age, if the tumors are distinct, being separated from each other by islands of healthy mucous membrane, and particularly if there be no evidence of anæmia present, the case is one suitable for the clamp and cautery. Where these indications are not present, and especially where the hæmorrhoids are very large, involving almost the entire rectal circumference, the operation by excision offers the best results.

In the clamp and cautery operation a liberal cut is made through the dermal tissue at the margin of the anus, exactly like the incision used prior to the application of a ligature. This allows opportunity for clamping the hæmorrhoid in its entirety and also secures good drainage while healing is taking place. This may seem a small point to speak of to those doing the operation frequently, but I am constantly seeing otherwise good surgeons neglecting to make this large cut, which to me seems very necessary. The general technic of this operation is well known to all surgeons.

In excision, my rule is to commence by placing a stitch of No. 2 or 3 catgut at the upper surface of the hæmorrhoid and tying it, thereby preventing much of the hæmorrhage which is sure to occur in this somewhat bloody operation. A double V is now cut through the mucous membrane, the apex of the lower V encroaching upon the skin, that of the upper V reaching to the safety stitch already placed, and the widest part of the double V being at the central portion of the hæmorrhoid. All diseased tissue is then dissected away, down to the sphincter muscle; the mucous membrane is everted, and by a snipping movement of the scissors, all hæmorrhoidal tissue, first on one

side and then on the other, can be cleaned out as thoroughly and completely as by any other known operation. The mucous membrane, of which probably not more than three quarters of an inch has been sacrificed at the central and widest point, is now brought together by a running stitch, or, if preferred, by interrupted sutures, using the same gut with which the high safety stitch was made. Should by any unfortunate circumstance the suture on either side tear out or become absorbed before perfect healing has taken place, no great harm is done, because granulation soon fills the gap and a new mucous membrane covering is quickly formed. It is a rare occurrence for such an accident to happen to more than one side; the other sutures usually hold and heal by first intention.

Far different would be the result, however, if such an accident were to happen after a Whitehead operation. In such a case the skin pulls away from the mucous membrane and allows it to slip back, leaving a raw surface of more than an inch around the entire circumference of the gut, the healing of which is a serious problem. Were this the only disadvantage of the Whitehead, we might take a chance, for when properly done this operation presents a very workman-like appearance when completed; but it possesses several other bad features, and I have already on many occasions put myself on record as condemning this operation *in toto*, and as the years go by I see no reason for modifying my views.

In my experience the only complication occurring after the above-described slit operation has been a small abscess forming on the line of the sutures (this in only three cases). Opening and draining has cleared this up in ten days. As proof of the radical effect of the operations described I would state that only two cases have returned for a second operation; both were young men under thirty, men engaged in laborious pursuits, one an expressman, the other a puddler in an iron mill.

Of 305 cases of *fistula in ano*, twelve were refused operation, having reached such an advanced state that a successful result in my judgment seemed impossible. Of the whole number of cases operated on, 26 were somewhat improved but not cured, and the others were given a clean bill of health; the fistulæ healed, and no recurrence took place as far as records were obtainable.

The treatment of fistula is a fairly large subject, but a few points may be brought out which have impressed themselves on me, the result of failures as well as successes. A favorable issue in these cases not only means careful and thorough operation, but sound judgment and infinite patience in the after-treatment. I doubt if any one enjoys the treatment of an anal

fistula. Such cases are tiresome, more or less repulsive, and many times thankless tasks. The patients themselves, however, are anxious to get well, and they, at least, deserve the best attention that can be given them. Unfortunately, fistula falls in the list of surgical diseases usually classified as minor, and not infrequently gets minor attention.

Except in very severe cases, the operation is not a difficult one. The most common causes for failure because of faulty technic at the time of operation are, first, unnecessary haste and the consequent oversight of some branching sinus; second and by far the most important, failure to find the true internal opening into the bowels. Unless this is found and the sinus is properly opened up and cleaned out, cure of the case is impossible. Barring these technical mistakes, the main reason that so many patients are dismissed from hospitals with report cards reading "nearly well" or "somewhat improved," rather than "cured," is the custom of turning them over after operation to interne, house steward, or nurse. The surgeon takes no further interest in them, and if the result is good it is due to good luck rather than good management. It is only by daily supervision, combined with much judgment and experience, that many of these cases can be worked out successfully.

In recommending and doing an operation for *fistula in ano*, it is a rule with me to refuse to operate unless I can feel reasonably sure that in case of failure my patient shall not find himself in a more uncomfortable condition than when he came to me. Fistula does not necessarily imperil life, it can be carried and endured for years; therefore, unless the patient can be cured or materially improved it is better not to operate.

Naturally, during my work in this line I have attacked some seemingly hopeless cases. One of them, particularly, stands out as presenting about all the difficulties and perplexities we ever get. The patient had submitted to three operations at as many large hospitals in this city. He had a horseshoe fistula with six external openings, two of which were located on the summit of each buttock, about eight inches apart. The sinuses leading from these two openings had a depth of five inches each, and fluid injected into one of them would flow out of the other as well as out of the rectum. Treating all of the diseased tracts in this case by the open method would surely have been fatal, and an attempt to do excision and expect a rapid closure was also out of the question. The problem was first to locate the sinus running at right angles to the deep sinuses opening on each buttock, and after finding it to remove all purulent tissue without laying the whole tract open. I spent a day or so before operating, formulating a plan for doing this. Incisions five

inches long and of about the same depth were made at the openings on each buttock. This gave a good deal of freedom for manipulation and made it fairly easy to locate the connecting sinus, which was found at the bottom of the incisions to the other, close to the sacrum, a distance of more than six inches across. Working with the index finger of each hand from both ends I was able to dilate the canal until it was large enough for the passage of a fairly good-sized piece of gauze long enough to protrude at both sides. All the other sinuses were opened, cleaned out and packed with gauze, including the main canal into the bowel. Deep stitches, one each at the upper and lower angles of the buttock wounds, were placed so that too much tissue might not be left exposed. For a few days the long piece of gauze was left *in situ* and its position occasionally slightly changed by traction so as to favor suppuration and thus destroy the pyogenic membrane. From time to time the size of the gauze was reduced; later heavy silk and finally the finest obtained was used until the sinus closed. This was accomplished long before some other points had healed, but by close attention, stimulating at one place, cauterizing at another, and packing lightly each day, I had the satisfaction of seeing the case recover and leave the hospital completely healed after three months of painstaking work.

In the remainder of my list are included about all the operative diseases which fall within the province of the rectal surgeon. Eighty per cent of my cases of fissure were operated on under a general anæsthetic. Fissure rarely occurs uncomplicated by some other rectal disorder, and to treat the case properly an operation under ether is usually necessary and always safer. A clean dissection of the ulcerated tract should be made. To insure success, careful divulsion of the sphincter is essential, but in these cases I have never found it necessary to divide the sphincter muscle in its entirety as some recommend, but deem it advisable merely to cut through some of its fibers. After the fissure is thoroughly cleaned the mucous membrane and other tissues may be brought together by catgut sutures, or the freshened wound may be left open to heal by granulation, being packed lightly each day; the time consumed in healing in either case is about the same. My indications for attempting cure of anal fissure by conservative means are simple, and with me they have worked out well. If the fissure extends out into the skin tissue and is therefore well drained; if there are no polypoids or other diseases in the rectum to complicate the case; if the fissure does not extend too high into the bowel, conservative means like cauterization will often effect radical cure. If the disease, however, seems high in the rectum, being well within

the anal margin, the exposure in its entirety being therefore made difficult, and particularly if a distinct sulcus or pocket at its external margin obtains, conservative means will prove disappointing. In such cases, however, under local anæsthesia, a bistury may be drawn down through the fissure and a cut made through the skin to the depth of the pocket within; but if permanent relief is sought this method applies only to those cases who have no other rectal complications.

In *proci dentia recti*, where the prolapse results from laxity of tissue between sigmoid and anus, rectopexy is the only operation that has given me any satisfactory results. I believe it a far better method than any of the older ones like the Van Buren and others. Where the *proci dentia* is due to an unusually long, relaxed, or stretched mesentery, nothing will cure the case other than opening the abdomen, pulling up the bowel with its mesentery, and fixing it to the abdominal wall. This procedure must not be attempted lightly, however, for although it undoubtedly relieves the *proci dentia*, it may produce intestinal twists or kinks that may prove a serious menace in the future.

Regarding pockets and papillæ, I do not believe what has been stated and written, namely, that about two thirds of the ills to which we are subject are due to their existence. I do believe, however, that both of these apparently simple and trifling conditions may be decidedly troublesome, and that they are prone to cause many serious symptoms in various remote parts of the body because of irritation of the nerves of the great sympathetic system. Many times, a diagnosis of the cause of these diseases or of the diseases themselves can only be made by a process of exclusion. If local examination reveals their presence, their removal often clears up a perplexing case. The temptation to go more into details about these little annoyances is great, but for those already familiar with the subject it is not necessary, and for those who are not, this hint will be sufficient.

Regarding cancer of the rectum, what can be said? As the years have rolled by I have hoped that some one out of the thousands studying its ætiology and its destructive progress would formulate a method of cure, but I have hoped in vain. Several times these hopes seemed about to be realized, only to perish in the test of actual experience. What I have already said regarding the futility of operating unless good can come out of it applies certainly with added force to cancer of the rectum. Out of all cases examined during my entire practice, including dispensary patients, only four have offered reasonable hope of prolonging life to any degree by excision. This at first thought would seem strange but is easily accounted for. Malignant

nant disease affecting the breast or other visible portions of the body quickly attracts the attention of the patient, and surgical relief is sought fairly early. When the disease occurs in the rectum it is another matter. The first symptoms are so vague and so easily confused with hæmorrhoids, fissure, ulceration, and other rectal troubles, that the sufferer rarely seeks advice until the disease has progressed for a long time; and even when he does consult a physician, the chances are that the patient is allowed to make his own diagnosis, no examination is insisted upon, he is treated for hæmorrhoids, and thus more valuable time is lost. When things have progressed to a point where the symptoms literally cry out for relief, he is referred to a rectal specialist or general surgeon. The disease has now attacked all the surrounding tissues, infiltration has occurred, the bowel is bound down by adhesions around most of its circumference, and separation from the bladder, and in women from the uterus and vagina, is almost impossible. Of course, even at this stage the growth may be removed by one of several methods, but the question then is, does it pay anyone except the surgeon? I find I have examined twenty-eight cases where the diagnosis of malignancy was clear and where any operation was positively refused. Two cases submitted to excision after preliminary colostomy. In both instances the disease returned *in situ* within a year, with fatal results. In one case, where excision alone was done, the disease returned in a few months and proved rapidly fatal. Colostomy was done in twenty-two cases solely for temporary relief from pain. The prolongation of life was from six months to six years. In all but one case the relief from pain and anguish given the unfortunates made the operation well worth doing. Almost without exception in these cases the disease had reached a point where the rectum was practically occluded, and the suffering and torment was constant and harrowing. The opening in the bowel well above the seat of the disease establishes free exit for fæcal matter through the inguinal region, and this relieves all pain and suffering and allows the patient to die fairly peacefully. Freedom from irritation by the passage of fæces was undoubtedly in a large measure accountable for the freedom from pain and the consequent renewed lease of life.

In the single case where little relief was given there were adhesions and a very short mesentery, because of which it was impossible to draw sufficient bowel out of the abdomen to make a proper spur. Such a spur serves as a dam, as it were, and prevents fæcal matter from passing down through the strictured bowel and thereby keeping up the irritation and distress. In the light of further experience I believe that had I gone higher

in the descending colon, or even into the transverse portion, where it would have been possible to draw out a sufficient amount of intestine to make a good spur, the result might have been different.

I am sure that the terrible pain these patients always suffer is not so much due to an involvement of nerve tissue in the growth as to the stricture and the resulting inability to get anything through unless it be liquefied by powerful cathartics, and even then only with the greatest difficulty.

Discomfort and annoyance from the artificial anus in the inguinal region is usually slight, because unless diarrhœa persists, which is the exception, the patient gets along with one movement a day at about the same hour. A proper truss padded with gauze controls the spur well, and the patient, quite able to attend himself, gets on very comfortably.

It is not always possible by digital palpation to determine the variety of rectal cancer present in a given case, for the growth may present at one part all the characteristics of scirrhus, and at another part the soft spongy feel of sarcoma. This really makes little difference in prognosis. The one thing we are certain about is that even if detected early and completely removed, we do not get the same immunity from return that often obtains when other portions of the body are affected.

Cancer rarely attacks the anal margin in its first instance; if it does it is usually of the epithelial variety and is apt to prove fatal more rapidly. Only four cases have come under my notice. Naturally, in this type the pain is excessive owing to the liberal supply of nerves at this point; hence, treatment must often be directed toward desensitizing or killing these nerve filaments. This I have accomplished by the thermal cautery. Possibly, X-ray or radium therapy would be of value, although Howard Kelly, in a recent paper upon his experience in the use of radium, did not report any cases treated in this location.

272 Newbury Street.

INFECTIONS OF THE GALL-BLADDER*

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The gall-bladder is somewhat like certain officious people; it appears to be very important, but under stress of circumstances develops so many shortcomings that it can easily be spared. In fact, we are coming to the conclusion that like these officious but useless people, it were better if it did not exist. Just why we have a gall-bladder is not entirely clear, since those individuals who have been deprived of it seem to thrive and prosper physically quite as well without it.

From the days of Galen until recently the belief was quite universal that gall-stones were caused by coagulation of bile induced by increased heat of the liver. We are now, however, reasonably sure that gall-stones result only from some form of infection in the gall-bladder, which affects the mucosa of that structure and thereby induces an increased outflow of mucus from the bladder lining, accompanied by an abundant quantity of cholesterin. It is the presence of an increased or abnormal amount of cholesterin in the gall-bladder which is the starting-point of all gall-stones. Even when gall-stones are found in the cystic, hepatic, or common ducts they undoubtedly had their origin in the gall-bladder. In other words, gall-stones are the result of catarrh of the gall-bladder, which has been induced by some bacterial invasion.

The following questions naturally present themselves: How does infection reach the gall-bladder? What conditions favor infection? How must we live so as to avoid and avert this threatening invasion?

It may be assumed that normal bile in normal bile passages is sterile, and that it will remain sterile as long as all functions are normal and no microorganisms have access to the gall-bladder or its passages.

Sluggishness in the flow of bile adds materially to the danger of infection. This sluggishness may arise from a variety of causes, such as obstruction of ducts, atony of the gall-bladder, lack of exercise, tight lacing, or over-eating with little accompanying activity.

The two weakest points in the defensive fortifications of the gall-bladder are the blood stream which comes by way of the portal circulation, and the gateway which leads up from the duodenal opening by way of the common duct. While there are other avenues of infection, such as the general circulation and the lymphatic system, the two mentioned are the chief ones.

* Read before the Vermont Homœopathic Medical Society, May 29, 1918.

Let us see what changes take place after the bile or the gall-bladder become infected. If it be a mild infection there is catarrhal inflammation of the mucosa of the gall-bladder. This is not sufficient to produce any marked febrile condition; it is not accompanied by much, if any, pain or discomfort; consequently, the patient is rarely aware of his trouble at the very beginning. There will be some thickening of the walls of the mucosa and an increased outflow of cholesterin; yet, if the resistance of the patient is good, and if there is no obstruction to the free outflow of bile, such as kinks, narrowing of the bile passages, or pressure from within or without, all may be well. But if, on the other hand, such obstruction exists, even though it may be slight, the acute inflammation of the mucosa soon becomes chronic, the bile becomes thickened and sluggish, and the addition of cholesterin tends to the formation of gall-stones. It may require a period of months or years for the stones to become sufficiently large to cause trouble; on the other hand, it is quite possible for them to form in a few weeks.

It is quite interesting to note that mild infections are more likely to produce gall-stones than virulent ones. The reason is this: very virulent infections cause such profound changes in the bile tracts and gall-bladder that the structures go to pieces quickly; pus forms, and we get a picture of purulent or gangrenous cholecystitis. Let me cite a case for illustration:

Mr. G., aged 70, had always enjoyed good health until one month ago, when he awoke one morning unable to void his urine. He called a nearby physician, who found so large a prostate that he could not catheterize the patient. I was called in consultation and succeeded in passing a silver prostatic catheter. During the ensuing three days the bladder was irrigated and catheterized, after which he was able to void without difficulty.

He was then taken with a chill and developed a severe pleuro-pneumonia on the right side. At about the height of the pneumonic fever, when the pulse rate was between 120 and 140, the temperature between 102° and 103°, and respiration 40, he developed severe pain under his right ribs, just below the lower border of the liver. This increased in severity for 24 hours and was followed by dullness and bulging in that locality. It was not altogether clear whether this pain and dullness meant abscess of the liver, due to extension from his infected lung, or a suddenly infected gall-bladder and suppurative cholecystitis.

The evidence seemed indicative of the latter, and the question of operation at once arose, which, considering his critical state, was a delicate matter to decide. The opinion of three consultants coincided that the patient's only hope of recovery lay in an immediate operation. This was performed twenty-four hours after the first evidence of the infection. Chloroform was administered instead of ether, and the result showed the wisdom of this selection, as he had no subsequent bronchial or pulmonary irritation. The gall-bladder was found to be so tensely filled with pus that it seemed ready to rupture. It was a thin-walled bag of pus, almost black in color.

When Lieut. Peary made a dash for the pole, his one thought was to locate it in the shortest possible space of time and return alive. He did not care to bring the pole with him. So it was with this operation: the object was to find the pus, liberate it, and get the patient back to bed alive. Hence, rapid gauze packing around the gall-bladder, evacuation of the pus, taking a

few sutures, leaving half a dozen strips of sterile packing about the gall-bladder, were done so hurriedly that the patient was not on the operating table over 15 minutes. He made a most gratifying recovery and is entirely well today, one year after the operation.

This case had never before shown the slightest evidence of gall-bladder trouble, and there were no stones. No doubt the structures became infected through the portal circulation, which picked up the infection from the lungs, and so overwhelmed the gall-bladder with poison that it succumbed quickly. To have left it untreated would have meant its rupture and a fatal peritonitis.

In another group of cases we will find patients who have had repeated classical attacks of gall-stone colic at frequent or rare intervals and who have recovered easily from each attack until suddenly the gall-bladder flares up with an alarming inflammation that bears all the earmarks of suppurative cholecystitis. The following history, taken from my record book of two years ago, illustrates such a story:

Widow, 75 years old, has had a defective cardiac valve for a number of years, rendering her a semi-invalid. She has had repeated serious attacks of angina. Three weeks ago she was taken with a severe paroxysmal pain in the upper right abdominal quadrant. She had had previous attacks of gall-stone colic about twelve years ago, but has been free from them during the last five years.

The present attack was like gall-stone colic but more continuous. After the acute pain subsided she began having continued distress in the region of the gall-bladder. Later she developed a slight rise in pulse rate and temperature, which was followed by chill and further rise in temperature. This chill was repeated on the third and sixth days. She then showed marked evidence of sepsis; the temperature remained about 101° F. and the pulse rate between 120 and 140.

It was at this period that I saw her. Upon examination the patient looked seriously ill; the color was ashen, the pulse irregular and rapid, and respiration superficial; a marked bulging of the gall-bladder with tenderness over the entire abdomen was evident. Bowels had been regular with normally colored stools. I diagnosed sepsis of the gall-bladder and advised immediate operation.

An incision disclosed a quantity of sero-purulent fluid in the abdomen and a large gall-bladder, to which were adherent omentum and transverse colon, giving evidence of chronic cholecystitis and peri-cystitis. The adhesions were released, the abdomen cleansed, the gall-bladder walled off and then aspirated. A large quantity of foul-smelling ancient pus was withdrawn together with twelve stones. The gall-bladder was then incised, cleansed, and drained with a rubber tube in the usual manner. The gangrenous appearance of the gall-bladder warranted its removal had the patient been equal to further operative measures, but under the circumstances it was deemed inexpedient to carry the operation further. A second drainage tube was inserted below the gall-bladder and a strip of gauze drainage above.

The operation was completed in about fifty minutes; the patient rallied well, but subsequently developed most discouraging symptoms: the pulse became irregular, the stomach irritable, and breathing superficial. The gauze drainage was removed in thirty-six hours, which was followed by considerable shock. From this, however, she rallied under the administration of saline

by the drop method. The next day the abdominal rubber drainage tube was withdrawn, after which time she made steady progress and a good recovery. Today, two years after the operation, she is entirely well.

In her case the gall-bladder had no doubt harbored gall-stones for years, when suddenly it became infected and went rapidly to suppuration.

Gangrenous cholecystitis is not an unusual misfortune, because the gall-bladder is but poorly supplied with blood vessels. When a virulent infection attacks this organ it seems to go to pieces very quickly. The symptoms are very much like those of fulminating appendicitis. There is sharp pain in the region of the liver, nausea and vomiting, chills and rapidly rising pulse and temperature. The pain is usually quite definitely located, and while it may be mistaken for perforating pyloric or duodenal ulcer, yet the distinguishing tumor is usually present. In these cases perforation usually takes place very quickly and no time should be lost in operating.

The gall-bladder seems to be the favorite abode of typhoid bacilli, for it is in this place that they find a lodging-place after the patient has made a complete recovery from the fever; and there they may remain quiescent for five, ten, or twenty years, when some unusual activity of that viscus calls them into action. Typhoid carriers harbor more or less active typhoid bacilli in the gall-bladder; the bacteria are constantly being carried into the intestine *via* the common duct, and thence are transferred to other victims. Kelley reports a case wherein the bacillus was recovered from the gall-bladder fifty years after the patient had recovered from typhoid fever. As a case in point the following may be reported:

Four years ago I operated upon a woman sixty-four years old, who had obstructive jaundice. As was expected, it proved to be due to a calculus in the common duct. In removing the stone I crushed it and was obliged to take it out piecemeal. She rallied nicely from the operation and did well for a week; then she began to show evening rise of temperature. This climbed steadily higher, notwithstanding perfect healing of the entirely aseptic wound. Bile was flowing freely from the drainage tube in the gall-bladder, and there was not the slightest sign of local infection. After that she ran a typical course of typhoid fever for six weeks, ultimately making a good recovery. We learned later that she had had a severe attack of typhoid fever fifteen years ago, with evidence of gall-bladder complication. It seems quite probable that in her case typhoid bacilli were lodged in the gall-bladder, and that the irritation attendant upon the operation was the cause of renewed virulence and resulting fever.

As a result of suppurative cholecystitis the gall-bladder, when distended with pus, may reach an enormous size. Deaver relates that in one case seen by him in the German Hospital of Philadelphia an enormous tumor of the abdomen was diagnosed ovarian cyst, but operation showed it to be a distended gall-bladder reaching to the brim of the pelvis. In one of my own cases I found a gall-bladder the size of a large grape fruit.

In nearly all cases of the suppurative type there is also a peri-cholecystitis due to infiltration of pus into surrounding tissues, with extensive adhesions. We occasionally find evidence of bile in the abdominal cavity even where there has been no rupture of the gall-bladder; the bile oozes through the walls of the gall-bladder by the process of osmosis. I have seen a number of such cases, but observed none wherein the extra-cystic bile was infected.

The presence of calculi in the gall-bladder is not necessarily a serious condition. It has been estimated that every tenth person has gall-stones, but only about five per cent of such persons ever show any evidence thereof. The dangers of their existence are, first, an escaping stone may block up the bile passages, and, second, the presence of calculi always invites gall-bladder infections. This will explain the not infrequent occurrence that people who have had occasional slight gall-stone colic attacks suddenly become seriously ill and must have the gall-bladder opened or removed.

The following case illustrates another form of danger from old gall-stones whose presence has been more or less well indicated:

A woman, 59 years old, referred to me by a Boston physician, gave a history of having had a number of typical gall-stone colic attacks several years ago, but none within three years. She was, however, always conscious of discomfort in the region of the gall-bladder, which had increased until it was becoming unbearable. This discomfort was not paroxysmal, was not agonizing, and was unaccompanied by other symptoms. X-ray showed a large stone in the fundus of the gall-bladder.

One month ago I operated upon her at the Newton Hospital and found a small gall-bladder contracted firmly upon a single stone the size of an English walnut. The interesting part was the fact that the contraction of the gall-bladder about the stone had caused the latter to ulcerate through the walls of its prison and to protrude slightly at the fundus. There was no bile in the gall-bladder, as the contraction had rendered that structure entirely useless. The gall-bladder was removed entirely, and the patient made a good recovery.

In cancer of the gall-bladder the history of cases is about as follows: A patient well along in the late sixties or seventies has been feeling as well as usual, with no gastric or intestinal disturbances. Suddenly he appears to be jaundiced; his comfortable feeling has not been impaired, and he is at a loss to understand his yellow skin. He is absolutely free from pain, and while his appetite is slightly affected, yet he feels well. Soon he notices that his stools are markedly clay colored. He seeks the advice of his physician, who goes over him carefully, eliciting only one symptom, aside from his jaundice, and that is an enlargement in the region of the gall-bladder. The bladder may or may not be sensitive, but the enlargement is marked,

especially if the patient has a thin abdominal wall. Treatment, whatever it may be, has been of little avail; the jaundice persists and becomes deeper; the appetite flags, with accompanying weakness and weight reduction. Months may pass before the real cause becomes apparent, unless it was anticipated at the first examination. In the end comes the diagnosis: cancer of the gall-bladder, biliary ducts, liver, or pancreas.

Only last week I saw just such a case in consultation and within the last year have observed three of them. They have made a very deep impression upon my mind, particularly as in none of the three were the patients materially affected in the early stages of the disease; yet in all three there was rapidly ensuing jaundice and subsequent clay-colored stools. Two of these patients I subjected to operation with fairly good results. As one of them presents some features of unusual interest, I will take the liberty of detailing it.

The patient was a woman, 76 years of age, with a very clean family history. She was spare in build, but of the wiry, enduring type that shows great lasting qualities. For the previous three or four years she had been subject to what she called "bilious attacks," wherein she would have active diarrhoea and some vomiting.

I saw her first on April 19, 1914. She was then deeply jaundiced, but perfectly well otherwise. I examined her carefully and found a distinct lump under the edge of the liver, which was movable and painless. She said that she had had jaundice for a week, and that it appeared suddenly; but she had no pain whatever in the abdomen. Her stools were clay-colored, and the urine highly tinged with bile.

The rapid appearance of jaundice, the absence of vomiting and pain, together with the absence of fever and tenderness, ruled out anything of an inflammatory or infective type. The absence of biliary colic, either immediate or remote, was evidence against common duct obstruction by a calculus. The presence of a lump in the gall-bladder, movable and painless, was naturally indicative of an over-distended gall-bladder; but the questions were, what had interfered with the outflow of bile from the gall-bladder, and what was interfering with the passage of bile through the common duct? It was to be assumed that she had some form of common duct obstruction, and as the jaundice grew deeper every day it became apparent that operative measures must be employed to relieve the obstruction. At her age, 76, a summary of all the symptoms spelled only one thing: cancer of the gall-bladder.

I operated upon her on April 22 and found cancer of the gall-bladder, which extended downward and implicated the mesenteric glands and the entire length of the common duct. The gall-bladder was greatly distended and its outflow had been entirely obstructed; its walls were greatly thickened by the cancerous infiltration. The question immediately arose, what could be done to relieve the steadily increasing jaundice and prolong the patient's life?

It was found that the common duct was so badly involved in the cancerous growth that its lumen had been entirely obliterated. There was, as a result, no natural passage whatever through which the bile could reach the duodenum. I therefore removed the gall-bladder, resecting the hepatic duct at a point about one inch from its exit at the liver. I also removed the mesenteric glands together with the greater portion of the common duct. In so doing I had, of course, cut off all possible communication between the liver and the duodenum. I then attached a rubber drainage tube to the one-inch stump of the hepatic duct, brought the tube to the surface of the wound, astened it to the skin, and closed the incision.

There was at once free drainage through the rubber tube, showing that the connection between it and the hepatic duct was perfect. The patient improved at once, the jaundice disappeared, the appetite and strength grew better. The stools, of course, showed no change, as all of the bile manufactured by the liver was now coming out through the rubber tube.

This operation, of course, was only a relief measure to enable the patient to recover from her deepening jaundice. At the end of two weeks the rubber tube was removed, and it was found that nature had constructed a sinus about this tube, and the bile thereafter flowed freely through this newly made sinus.

At the end of four weeks it became apparent that something must be done to enable the patient to get the benefit of bile in the intestinal tract. May 30, five weeks after the first operation, she was again placed on the operating table, and an opening was made through the first incision. I was gratified to find no evidence of a return of the cancerous growth. The above mentioned newly made biliary sinus, extending from the liver to the surface of the skin, was carefully dissected from its dermal attachment, and an effort made to connect it with some part of the intestinal tract. It became apparent that the duodenum could not be brought to the under surface of the liver and there connected with the sinus, without making such an acute angle in the duodenum as would result in obstruction. I then sought the pyloric end of the stomach and found that it could easily be brought to this position without any undue stretching. Freeing about one inch of the sinus, which was practically an elongated hepatic duct, I made a small opening in the pyloric end of the stomach, inserted the sinus or duct well into the opening, and there stitched it by a running purse-string suture. I then stitched the pylorus to the under surface of the liver, so as to insure the permanency of its new position. I placed a drainage tube upon each side of the anastomosis of the stomach and duct, and closed the incision.

I was gratified to find that in a few hours the patient vomited a small quantity of bile, which showed that the opening from the liver into the stomach was patent. In a day or two there was evidence of bile pigment in the stools. She continued to improve for the next three months, having daily bowel evacuations that were perfectly normal in color, not the slightest evidence of jaundice, little or no irritation of the stomach from the presence of bile, and no vomiting. Her appetite improved, and her strength increased materially.

At the end of three months she began gradually to show evidence of jaundice. This remained stationary, and she lost strength steadily; but at no time was there an absence of bile pigment in the stools. She died August 26 from recurrent cancer of the liver, three months after the second operation.

This case is illustrative of a number of interesting points: first, the insidious manner in which cancer attacks the gall-bladder and bile ducts, and the foremost symptom exhibited, namely, rapid and deep jaundice; second, the possibility of removing the diseased common duct; third, the possibility and feasibility of making a direct connection between the liver and the stomach, thus eliminating the gall-bladder and all the biliary ducts. This operation is known as hepatico-gastrotomy, and Deaver, in his recent work on "*Diseases of the Biliary Tract*," records but seven such operations, after none of which the patients lived as long as the one just recorded.

As to treatment of infections of the gall-bladder, we find that it varies with the degree of the infection. In those cases wherein the toxæmia is sudden and overpowering, as illustrated in the case of Mr. G., who had pleuro-pneumonia, there is

nothing to do but open the abdomen and drain or remove the gall-bladder, and the sooner it is done the greater are the chances of recovery. In other cases, where the symptoms are milder and slower in developing, we need be in no haste about operating, as the majority of them recover and only comparatively few go on to suppurative or gangrenous destruction. It is in these milder cases where medicinal remedies, local applications of ice or heat, rest, and conservative diet will be of much avail. There is this point, however, which we should always bear well in mind: a patient who has had even one attack of infective cholecystitis is a promising subject for further gall-stone trouble, and should be watched with that possibility in mind. Or, putting it in another way, a patient with suspected gall-stone colic, who gives a history of one or more previous attacks of catarrhal cholecystitis, is almost sure to have gall-stones which are likely to cause trouble.

The best preventive, here as well as in all other infections, is to keep the body up to the best possible state of resistance by obeying the fundamental laws of health, which have their expression in a carefully chosen diet, regular exercise according to the strength of the individual, a systematic manner of living, regular hours of sleep, and a tranquil mind. In other words, we must keep our standing army of antibodies up to their maximum fighting strength, no matter whether there be peace or war.

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HYPERÆSTHETIC RHINITIS OR HAY FEVER*

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Hay fever as a clinical entity has been recognized since the early part of the nineteenth century, and at that time was considered a catarrh. Boswich, an early writer on the subject, connected the condition with the sun's rays and heat and called it summer catarrh. Some time later the disease was considered due to the odor of hay, and thus appeared the name hay fever. Similarly, the appellation "rose cold" was given to the variety apparently caused by inhaling the odor of roses. John Eliotson in 1830 first recognized the definite relationship between the pollen of certain flowers and plants and hay fever.

In United States it was early noticed that there are two distinct conditions inducing hay fever, very similar in nature but occurring at different times of the year, one beginning in the later part of May and ending in early July, and the second

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commencing the second week in August and continuing until October, the latter being the more common. Wyman in 1872 first sharply differentiated these two conditions, and recognized the pollen of the ragweed as one of the ætiologic factors of the autumnal form, while Blacky connected the early variety with the *Graminaceæ*, or grasses.

About the time of the researches of Koch and Pasteur, the pollen theory of causation of hay fever became lost in the theory prevalent at this time, namely, that hay fever, as well as almost all other diseases, had an infectious ætiology. However, in 1896 George Sticker, in a paper on the subject, established the pollen theory on a firm basis, although even he believed that pollen carried an irritating parasite that gave rise to the disagreeable symptoms. It remained for Dunbar definitely to convince the medical world of the specific action of pollen. The most recent experimental and clinical work has been done by Karl Koessler of Chicago.

According to Bollinger, "hay fever or hyperæsthetic rhinitis is characterized by annual paroxysms of sneezing accompanied by prolonged coryza and asthma." A rather more complete and scientific *definition*, and one in accordance with our present understanding of the condition, is the following: Hay fever is an exudative catarrh of the conjunctival, nasal, and tracheo-bronchial mucous membranes, produced in hypersensitive individuals by the sensitizing and anaphylatoxic action of the pollens of certain plants.

Some authors regard the symptoms arising from abnormal intra-nasal conditions and giving rise to similar coryza-like attacks as only slightly related to true hay fever. Such a condition may occur at any time of the year and does not entail the general constitutional depression which is characteristic of true hay fever.

The *predisposing causes* of hyperæsthetic rhinitis are constitutional, local, climatic, geographical, racial and altitudinal.

The *constitutional causes* include a neurotic temperament, chemical changes in the glands which secrete mucus, and gout and rheumatism.

The *local causes* of hyperæsthetic rhinitis are varied. A perfectly healthy mucous membrane placed on a normal framework is rarely affected. Certain cases present no septal deformity, hypertrophied turbinates, or occlusion of the olfactory fissure; yet they present the characteristic symptoms of hay fever. These cases usually show slight redness of the anterior end of the middle turbinal. In some of the cases during the interval between attacks the middle turbinates are found to be œdematous and boggy and during the attacks it is common

to find severe rhinitis and copious muco-purulent discharge. It is not unlikely, therefore, that a catarrhal sinusitis, most likely an ethmoidal or frontal, may be the underlying ætiologic factor in these cases. Hyperæsthesia is not unusual in these cases, and it is plausible to conclude, therefore, that an irritating discharge from a diseased sinus may set up inflammation of the nasal mucuous membrane and cause hyperæsthesia. This hypothesis is still further supported by the fact that successful treatment of sinusitis has sometimes cured co-existing hay fever. Careful examination of the sinus should then be of paramount importance in a case presenting symptoms of hay fever.

Ocular disease is more or less often found with hay fever, and in cases presenting no abnormal nasal condition, the eyes should be carefully examined.

Deflection of the septum or hypertrophy of the middle turbinate, causing contact between the two, are other local causes of hyperæsthetic rhinitis. The sneezing area is at the points of contact, and in cases presenting marked sneezing, removal of contact or pressure relieves the sneezing. Polypi have long been considered predisposing causes of hay fever, and as these morbid growths are often secondary expressions of sinusitis, the possibility of the causative relationship of the latter to the rhinitis is thereby strengthened.

Climatic influence upon hay fever is well recognized. The disease is almost entirely confined to a strip extending a few degrees north and south of the forty-fifth parallel of the northern hemisphere.

As to *geographical distribution*, the disease is more common in the United States of America than in any other country; England ranks second. It is present in France and Germany, though to a lesser degree.

The *racial influence* upon the distribution is marked. It is more common in the English-speaking races of the northern hemisphere than among the French or Germans.

Altitude is of undoubted influence in the causation of hay fever, as is indicated by the benefits received by those who make annual trips to the mountains of the Eastern States and to the bracing atmosphere of Lake Superior and the shores of Lake Michigan.

As to *age*, hay fever is more common between the twentieth and fortieth years.

The exciting causes: It is generally, in fact indisputably, proved that the exciting causes of hay fever or hyperæsthetic rhinitis are emanations from certain plants and animals. As before stated, it was at one time believed that all cases were caused by vegetable matter found in the haying season. Sub-

sequent observations have shown, however, that the exciting cause may emanate from various plants and animals, chiefly the following: *Graminaceæ* or grasses, *Solidago virgaurea* or golden-rod, *Ambrosia artemesifolia* or ragweed, cats, dogs, horses, and cows.

A series of experiments conducted by Goodale of Boston, and embracing twenty-four anaphylactic skin reactions excited in hay fever in an effort to discover what particular plant or plants excited anaphylactic skin reactions in cases of hay fever, are briefly as follows:

Fifty-eight cases giving a history of hay fever were examined. Pollen extracts were prepared by soaking pure pollen for twenty-four hours in 15 per cent. alcohol and filtering. Forty-five cases were examined with reference to grasses. It was observed that in all positive cases the red-top, timothy and blue grass excited equal reactions. Of these cases eight were affected by grass alone, none of the other plants tested exciting reaction. Thirteen cases were affected by both grasses and ragweed alone. Six cases showed positive reactions of grasses and roses alone. The beach grass was tested in twenty-seven cases. This, although flowering late in the season, excited positive reactions in eleven cases of the spring form, fifteen cases being doubtful or negative.

Ragweed was tested in forty-nine cases. Of these, forty-five were positive and four negative; thirteen were affected by ragweed alone, no other plants tested exciting reaction. Sixteen were positive with reference both to ragweed and to golden-rod, but not to other plants. One case showed positive reactions to grasses, ragweed and roses, but not to golden-rod or to other plants.

Forty-nine cases in all were tested for golden-rod. Of these, twenty-six were positive and twenty-three negative. One case only showed positive reaction to golden-rod alone, without disturbance from other plants, all of the other positive golden-rod cases reacting also to ragweed.

Twenty cases were tested for yarrow, five being positive and fifteen doubtful or negative. Beach wormwood was tested in six cases, two of them showing moderate reaction, four being negative. Field daisy was tested in fourteen cases, five of them showing a moderate reaction, nine being doubtful or negative. Burdock and fall dandelion were tested in three cases, each showing one positive and two negative results. Hawkweed was examined in seventeen cases, five being positive and twelve negative. English daisy (*Bellis perennis*) was examined in twenty cases, four being positive and sixteen negative. Pigweed was examined in twenty-six cases; three of these were positive

and twenty-three were negative. Wild carrot, or Queen Anne's lace, was examined in twelve cases, two being positive and ten negative. Pansy was examined in twelve cases, two being positive and ten negative. Two types of roses were tested, the early flowering Japanese rose and the late flowering prairie rose. The Japanese rose was examined in nineteen cases, three being positive, the remainder giving no reaction. The prairie rose was tested in six cases, two of these being positive. Tests were also made in a few cases, with negative results, of the following plants: California poppy, hawthorne, bayberry, frost grape, jack pine, peony, white oak, rhododendron, hardhack.

As still further proof of ætiologic relationship between pollen and hay fever, or as it might be better called, pollen disease, the following may be offered:

First: If a few pollen grains from one of certain members of the botanical group *Graminaceæ*, such as rye, wheat, timothy, foxtail, etc., are inserted into the nostrils of a sufferer from rose cold, a typical attack of the disease is immediately produced. This may be done at any time of the year. Again, if a few grains of pollen from certain members of the botanical group *Ambrosia*, such as ragweed, golden-rod, asters, marigold, etc., are put into the nostrils of a patient subject to autumnal catarrh, an attack of the disease follows, even though the experiment be made in winter. Also, the action is specific, that is, pollen from *Graminaceæ* will have no action on the sufferer from autumnal catarrh and *vice versa*.

Second, and most conclusive proof: It has been established experimentally that guinea-pigs can be readily sensitized to pollen protein by minute doses gradually increased, and, after a suitable incubation period, suffer a most severe anaphylactic shock on reinjection. Guinea-pigs were injected with serum from the blood of a patient suffering from autumnal catarrh, and later re-injected with a solution of 1 : 10,000 ragweed pollen, and a typical anaphylactic reaction resulted, thus proving that the guinea-pigs had been sensitized to pollen protein by that contained in the patient's serum. Control animals were not affected by the same dose of pollen protein.

I think we must conclude, therefore that pollen from certain plants acts as a causative agent in at least a large majority of cases of hay fever. It has been found by experiment that of the members of the botanical group *Ambrosia* which produce this specific reaction, the pollen from the ragweed is characteristic and representative. Consequently, ragweed is used exclusively to produce immunity reactions to this group.

PATHOLOGY

Structural changes in the affected nasal mucous membrane consist of œdema and hyperæmia, later followed by hyperplasia of the middle turbinates. The elevated hypersensitive areas are found to be the endings of the terminal filaments of the sphenopalatine ganglion. Polypi and polypoid degeneration may be present.

The disease is really a combination of a moderately severe neurosis and morbid changes which result in local irritation of the nerve terminals of the sphenopalatine ganglion, being dependent upon the irritating and toxic action of pollen and emanations from certain plants and animals.

SYMPTOMS

The symptoms of hyperæsthetic rhinitis are those of an acute coryza, namely, congestion, sneezing, lachrymation, fever, headache, serous discharge, itching of the soft palate and inner canthi, and asthma.

The sneezing is paroxysmal and may be excited by light draughts of air, sunshine, dust, and physical impressions; the conjunctivæ are suffused; the profuse excoriating nasal discharge is followed by shrinking of the nasal mucous membrane with a sense of temporary relief. Tinnitus aurium is present and is due to swelling of the mucous membrane of the Eustachian tube. Alternating stenosis is commonly present. The pharynx is often dry and deglutition is painful. One of the most common and important diagnostic symptoms is the extreme diffidence of the patient. Anorexia and slight loss of weight usually follow repeated attacks.

PROGNOSIS

A conservative prognosis should always be given. Removal of morbid nasal conditions cures some cases, while others gain no relief from this and may require a journey to the mountains. A remedy that is efficacious in one case may be wholly ineffective in another. Each of the following methods of treatment should be employed, applying the one which seems most favorable in the case in question.

TREATMENT

The treatment may be divided into five groups: (1) treatment of the dyscrasias; (2) removal of local morbid processes of nose and accessory sinus; (3) removal of patient from the influence of pollen and other irritating emanations; (4) immunization of the patient; (5) relief of acute symptoms.

Treatment of neuroses or dyscrasias: This phase of the treatment is at best difficult, but an attempt should be made to improve rheumatic and gouty conditions; hygienic living should be insisted on; elimination by the kidneys and skin should be aided; constipation should be overcome. These and other measures should be adopted so that the neurotic condition of the nervous system may be improved.

Treatment of the local morbid lesions: Circumscribed hypersensitive areas should be cauterized with a flat electrode at white heat, without the use of a local anæsthetic. Polypi should be removed during periods of quiescence. Chronic rhinitis should receive appropriate treatment. Deviation of the septum and septal spurs and ridges should be corrected. The accessory sinus should be treated for catarrhal or purulent sinusitis, if such exists.

Protection of patient from pollen and other exciting emanations: Patients may be advised to journey to the mountains or the Great Lakes, or to take an extended ocean or lake voyage. Though not always effective, it is very often so if protracted over the period of acute attack. Not all patients are relieved by change to the same locality, however.

Small soft sponges may be worn in the vestibules of the nose to filter the pollen and irritating substances from the inspired air. At best these give only temporary relief.

Palliative treatment: Various local and internal remedies have been lauded, but none have proved to be of value in every case.

Adrenalin has many advocates and in the majority of cases will alleviate. It may be employed locally or internally. Among the best preparations for local treatment are adrenalin inhalant, anæsthone cream, and anæsthone inhalant; anæsthone cream contains adrenalin chlorid 1-20,000 and 10 per cent. para-amido-ethyl-benzoate in a bland oleaginous base.

Insufflation of powdered sulphate of quinine has been successfully employed by Bollinger. The nasal mucous membrane becomes dry and turgescence disappears. Absorption of the drug causes tinnitus and is on this account disagreeable.

Athalin or oleaginous sprays may be employed with temporary relief; among them are alkalol, sabalol, or oil with .05 per cent. menthol or 1 per cent. formaldehyde.

The rays of a 500 c. p. incandescent lamp employed for ten to fifteen minutes may relieve some cases by virtue of increasing the blood current, that is, by relieving turgescence of the swollen turbinal bodies.

Pierce has employed powdered diphtheria antitoxin with some good results. Dr. Stern recommends that branches of the

spheno-palatine ganglion, as they enter through the anterior perforations of the cribriform plate, be desensitized by alcohol injection after cocainizing the ethymoidal region.

Serum treatment: The serum treatment introduced by Dunbar has been a means of cure in many cases, but also a source for argument and of disagreement.

Dunbar elected to immunize passively, and his well-known pollantin is the outcome of his efforts. He injected horses with gradually increased doses of ragweed pollen, with the expectation that a specific anti-body would eventually be formed in the serum in sufficient amount for practical use. He hoped that by injecting this serum into a sensitized human being he would be able to neutralize the effect of the protein poison. Thus he assumed that the pollen protein acted as a true toxin. He was rewarded with a moderate degree of success.

The best explanation of the action of pollen in hay fever is that given by Koessler, the substance of which is as follows: It has been known for some time that the bactericidal power of the nasal secretion is due to proteolytic enzymes. It is, of course, accepted that the pollen protein, at some season of the year, reaches the nasal mucous membranes of all persons. In most people the proteolytic enzyme present gradually splits the pollen, like any other foreign protein, into harmless products, proteoses and amino-acids. This cleavage occurs slowly, so that the poisonous group contained in every protein molecule is at any one time only in small concentration and is rendered inert, since the diffusibility is low. Thus, under normal conditions, the absorption of protein is exceedingly minute. However, there are certain conditions which interfere with the normal function of the nasal mucosa, and in that case sufficient protein may be absorbed to lead to sensitization. One such condition may be a lessened nasal secretion associated with a lowered quantity of proteolytic ferment; or another may be a stenosis of the nasal canals through hypertrophied turbinates, leading to excessive accumulation of inhaled matter. It is conceivable that there may be a number of conditions which interfere with the normal nasal secretion. Whatever the cause of the disturbance of the power of the nasal secretion to break up complex protein molecules, the important fact is that, owing to the deficiency, there occurs a parenteral intake of foreign protein. This has the effect of injuring the epithelial cells of the mucosa and the endothelial cells of the capillaries in such a way that the mucosa remains permanently in a state of increased permeability for the protein, and most important, it brings about a new function of these cells, consisting of the production of a specific protective ferment against the specific

pollen protein — in other words, the local tissue becomes sensitized. This at first local sensitization gradually reaches every tissue in the body, and all fixed tissue cells become sensitized, which is only another way of expressing the fact that all cells attempt to protect themselves by throwing off this specific proteolytic enzyme. The tissues first injured, however, retain this specific protective power to the highest degree. Thus these cells remain permanently in a state of sensitization, and when the protein again comes in contact with the sensitized area during the following season, the protein is absorbed unchanged and broken up in the body. The effects of this process depend on the degree of concentration and quality of the poisonous fraction split off.

Experience has shown that the majority of cases of hay fever do not depend upon the peculiar properties of a single variety of pollen but upon a mixture of many pollens.

Pollantin, the result of Dunbar's work, combines the immunizing properties of the mixed pollens and is to be considered as an admirable means of treatment in a large number of cases. Pollantin is prepared as a powder, a liquid, or as an ointment, according to the form desired; for instance, liquid is used in the eye, ointment or powder in the nose. The results from the use of pollantin as compiled from physicians' reports are as follows:

40 per cent.	effectually benefited
44 per cent.	partially benefited
16 per cent.	not benefited.

Active immunization has not been tried until quite recently. Koessler of Chicago first began his work in active immunization in 1910. He used ragweed pollen and treated only cases of autumnal catarrh variety. He was the first to report definite methods of preparing pollen solutions, and to him must be given the credit of placing this form of the treatment on a scientific basis. He gave injections both in a prophylactic way and after the disease had been established. His results correspond closely with those of English investigators. He reports 10 per cent. absolute cures, 70 per cent. markedly improved subjectively and objectively, 12 per cent. subjectively improved, and 8 per cent. not affected.

The unit of pollen toxin adopted by various workers has been of different sizes. Manning adopted as a unit the amount of protein contained in 1-1,000,000 gm. pollen, or that contained in 1 c.c. of a dilution of 1 : 1,000,000. He has treated twenty-one cases; in seven others the treatment was incomplete for one or another reason. Two of these seven showed no

reaction, either good or bad. Four were certain that their attacks were lighter. One patient was undoubtedly made worse, a result which was due entirely to a mistake of judgment in giving her a large dose without gradually working up to it. Three of the cases had a bad complicating asthma. Two of these were completely under control and the other was much relieved.

He felt that he lost much valuable time in the early part of the treatment in being too cautious, as he realized the possible alarming effects which might be produced by too large a dose of the vegetable poison. He believes a dose larger than seventy-five units cannot be given without producing unpleasant symptoms.

In fourteen cases in which a positive result was obtained, he observed this striking occurrence in each case: After a dose was given sufficiently large to obtain relief, the freedom from symptoms lasted only from two to five days, depending on the severity of the case. Then the symptoms returned, although they usually were not so severe. Another dose of the same size being then given, relief was again obtained. One is impressed with the fact that the immunity conferred was only of a transitory nature.

Emmerich and Loew claim that calcium chlorid is rational and effectual in the treatment of hay fever; they maintain that cell nuclei in glands, muscles, leukocytes, and ganglion cells require calcium for proper functioning.

Emmerich and Loew have always impressed on hay fever patients that vegetables and fruit are of much greater moment for the mineral supply than meat or starchy foods or bread, especially for potassium salts, which in the body become oxidized and aid in maintaining the alkalinity of the blood; this in turn aids in the retention of calcium. A number of new cases are related, including the case of a man of forty-one who for years had had severe hay fever from the middle of May to July, sometimes sneezing forty times in succession. He began in March to take the chlorid and for the first time in fifteen years had a summer free from hay fever. The formula calls for 100 gms. crystallized calcium chlorid in half a liter of distilled water. Three teaspoonfuls of this are taken during the day, always with meals. This dosage is no more than one gets in a pint of milk, and it seems to be entirely harmless.

EDITORIAL

BOOKS for review, exchanges and contributions — the latter to be contributed to the *GAZETTE* only and preferably to be typewritten — subscriptions and all communications relating to advertising and other business should be sent to THE NEW ENGLAND MEDICAL GAZETTE, 80 East Concord Street, Boston. Make checks payable to THE NEW ENGLAND MEDICAL GAZETTE.

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DETERMINATION OF SEX

Sex determination has long been of great interest to scientists, physicians, and parents. Many theories as to the causes of sex determination and a corresponding number of methods to influence it have from time to time and for centuries been advanced. Some of these are obviously absurd, others are based upon a certain amount of experimental and scientific investigation, but none are as yet fully established.

That the natural determination of sex is not haphazard is evident from the fact that the two sexes are produced in practically equal numbers in all sexually differentiated forms of life, and it may be that this inherent and universal tendency is not amenable to influences within human control.

The ultimate cause of sex determination seems to reside in the germ cells. Paulmier and later DeSinety and Montgomery noticed that some of the spermatozoa of insects contained accessory chromosomes, and McClung afterward recognized that this unequal chromosome distribution had something to do with sex determination.

McClung, quoted by Apert,¹ believes that "females possess in their nuclei an even number of chromosomes arranged symmetrically in pairs," whereas male cells display a lack of nuclear symmetry "evidenced by the presence of a single sexual chromosome or, should there be two chromosomes, by a lack of similarity between them, one being bigger or more easily stained than the other, or it is different in shape."

In these quotations the terms *female cell* and *male cell* are not meant to be identical with ovum and spermatozoön but

¹ Apert, E., *The Determination of Sex*. West. Med. Review, 1918, xxiii, 287.

cells in general. For it is found that half the number of spermatozoa formed by asymmetric division of spermatocytes have symmetric nuclei, whereas the other half have asymmetric nuclei. All ovules are symmetric.

According to McClung,² fertilization with a symmetric (female) spermatozoön results in a female embryo, because the nucleus resulting from the union of two nuclei with symmetric chromosomes is also necessarily symmetric; whereas fertilization with an asymmetric (male) sperm cell develops a male embryo.

Wilson,³ on the contrary, later showed that it was the female cells and not the males that contain the sex-determining chromosomes, and that in half of the ova the accessory chromosome is male-determinant and in the other half female. He agreed with McClung in that he found some spermatozoa with an accessory chromosome and others without it, but he theorized that the union of a spermatozoön, containing an accessory chromosome, with an egg (all of which contain such chromosomes) results in a zygote with symmetric nuclei, that is, a female; whereas copulation between a sperm cell lacking the accessory chromosome and an egg containing it, would produce an asymmetric or male zygote. Both McClung and Wilson agree that there are two types of spermatozoa, although they differ in their interpretation of this finding.

Equal numbers of the two types of spermatozoa are formed, and this explains the approximately equal numbers of male and female children born. The above considerations must raise doubts as to the possibility of altering this proportion by means of external agencies. Blackman⁴ states that the mass of evidence showing that sex is inherent in the germ indicates that its determination is not subject even to the slightest control by environment. Nevertheless, it is *a priori* conceivable that environmental agencies may have some degree of determining influence in the matter. Thus, it is possible that the ovum is more receptive for male spermatozoa at one period of the menstrual cycle than at others, and conception during this period would, therefore, be likely to result in a male child; again, nutrition or administration of products of internal secretion may affect the receptivity or attraction of the ovum for either type of spermatozoa sufficiently to make a certain amount of willful sex determination possible.

² McClung, C. E., *The accessory chromosome—sex determinant?* Biol. Bull., 1902, iii, 43.

³ Wilson, E. B., *The sexual differences of the chromosome groups in hemiptera, with some considerations on the determination and inheritance of sex.* Jour. Exper. Zool., 1906, iii, 1.

⁴ Blackman, M. W., *Theories of sex-determination resting on a cytologic basis.* Cleveland Med. Jour., 1908, vii, 197.

Of the methods recommended for obtaining the desired sex only a few are worthy of serious consideration.

NUTRITION

The influence of nutrition upon sex determination was thought to have been established by experiments made upon frogs, silk worms, and other lower animals. It is said that a rich diet predisposes to the birth of females and that a spare diet is likely to result in the production of males. Attempts to duplicate this in man have been disappointing.

This nutrition theory, according to Castle,⁵ is based upon two fallacies: (1) Although animals that sometimes reproduce by parthenogenesis will procreate a large number of females if nutrition is good and chiefly males if nutrition is poor; yet this is due to the fact that good nutrition conduces primarily to parthenogenesis by which only females are produced, and poor nutrition favors the production of fertilized eggs. "The conclusion is drawn that good nutrition favors the production of females *among animals generally*, and that poor nutrition results *in general* in the production of males. As a matter of fact, the primary effect of good nutrition in the case described is *not female production, but parthenogenesis*, and the effect of poor nutrition is, *not primarily male production, but reproduction by fertilized eggs*, in which process the production of males is necessarily involved." (2) Feeding experiments on non-parthenogenetic lower animals, especially on insects, frequently result in an excess of males when nutrition is meagre, but this has been found to be due to greater mortality among females which require more food than males to complete their development.

INFLUENCE OF ADRENIN AND CHOLIN

The relation between hypertrophic disturbances of suprarenal activity and certain changes in the secondary sexual characteristics of individuals thus affected is well known. In young subjects these changes are particularly pronounced and may amount to pseudo-hermaphroditism. In fact, as Apert¹ points out, "Should the suprarenal hypertrophy have supervened during intrauterine life the changes are still more far-reaching; so much so that a female may all her life be looked upon as a male and marry as such." Because of these facts, Robinson attempted to control sex production in guinea-pigs by pre-conceptional injections of adrenin. Female guinea-pigs receiving daily doses of 0.25 to 1.0 mg, who were impregnated during this treatment, gave birth to twenty-five males out of

⁵ Castle, W. E., 1903. *The heredity of sex*. Bull. Mus. Comp. Zool., Harvard Coll., Vol. XL, No. 4, pp. 190-218.

thirty offspring. Conversely, guinea-pigs injected with cholin, which is generally regarded as a physiologic antagonist to adrenin, produced 90 per cent. females. These results must necessarily be confirmed by others before they are generally accepted.

INFLUENCE OF OVARIES

Several years ago Dawson⁶ advanced the theory that the sex of the embryo depends upon which ovary supplies the fertilized ovum, the right ovary yielding males and the left females. He claims to be able to predict the sex of the unborn child, except first-born, in 97 per cent. of cases, a few errors being due to unreliable data obtained from mothers. He believes that the ovaries ovulate alternately at twenty-eight day intervals, so that alternate ova are of one and the same sex. If, therefore, the first child is male, the second child, if born exactly a year later, will be female, because there are thirteen ovulations in each year. Furthermore, parents wishing a child of the same sex as the one previously born should merely confine sexual relation to a period insuring birth of the child at a time that is an even number of twenty-eight day periods removed from the birth of the former child, and *vice versa*. In Dawson's recently published book⁷ upon this subject he adduces many clinical data as proof of his theory; nevertheless, most readers will undoubtedly fail to be convinced of its accuracy.

THE AGE OF THE OVUM

The limitation of coitus to a certain period of the menstrual cycle as a means of sex determination was first suggested by Thury, who formulated the hypothesis that an ovule fertilized soon after becoming detached from the ovary, that is, a young ovum, would yield a female embryo; and that an older one would give a male. Both confirmatory and contradictory experiments and observations upon animals have been published. R. Hertwig, especially, has offered seemingly convincing evidence that fertilization of over-ripe ova of frogs increases the tendency to the production of males.

Boissard believed that Thury's hypothesis is applicable to human beings. In some of his cases he was able to state exactly the date of conception because there had been only one intercourse, and he found that "when the fertilizing coitus had taken place during the days preceding the menstrual period or during the menstrual period (premenstrual coitus) the product

⁶Dawson, E. R., *The essential factor in the causation of sex: a new theory of sex*. Trans. Obstet. Soc., Dec., 1900.

⁷Dawson, E. R., *The causation of sex in man*. Hoeber, N. Y., 1917.

was always a girl. When on the contrary the single coitus took place some days after the menstrual period the product was invariably a boy (post-menstrual coitus). In nursing women who conceived without having menstruated the product was invariably a girl because the coitus was necessarily premenstrual."

Apert,¹ however, considers Boissard's case reports as far from convincing, "for many of them tend to prove exactly the opposite of what was intended." Furthermore, Freeborn, in the *Canadian Practitioner and Review* of June, 1916, reports distinctly opposite conclusions. He believes that conception during the first few days after menstruation results in female embryos and during the second half of the intermenstrual period in males. Although he claims to have "correctly diagnosed the sex of the child previous to birth in about 97.5 per cent. without reference to foetal heart sounds or any maternal sign," yet his method of reckoning the date of conception from the time of onset of labor is obviously too haphazard to inspire confidence.

This chance of error is largely obviated in the series reported by Siegel.^{8,9} His observations were made on women whose time of impregnation was known because their soldier husbands were at home only during short furloughs from the front. He divides the menstrual cycle into four periods, the first from the first to the ninth days after the beginning of menstruation, the second from the tenth to the fourteenth days, the third from the fifteenth to the twenty-second days, and the fourth from the twenty-fourth day to the beginning of the following menstruation. He found that cohabitation during the first period resulted in a preponderance of boys, during the third period in girls, and during the second in approximately equal numbers of both sexes, and also that the fourth period showed only a very small percentage of impregnations, this period being one of practical sterility.

Siegel thinks that follicular rupture and ovulation occurs from the tenth to the fifteenth days after beginning of menstruation and that, therefore, ova that produce females are young and those that produce males are over-ripe.

Pryll¹⁰ collected twenty-five similar war cases and adds thereto a large number of cases from ante-bellum literature, whose single cohabitation seemed to be certain. The statistics he compiled from this entire material are not in agreement with

⁸Siegel, P. W., *Zur willkürlichen Geschlechtsbestimmung*. Münch. med. Woch., 1916; lxxiii, 1787.

⁹Deutsch. med. Woch., 1915, No. 42.

¹⁰Pryll, W., *Kohabitationstermin und Kindsgeschlecht*. Münch. med. Woch., 1916. lx 1579.

Siegel's figures, showing nearly equal distribution and more or less parallel fluctuations of both sexes throughout the menstrual cycle. But when, as was pointed out by Siegel, Pryll's own twenty-five war-time cases are considered alone (and Siegel emphasized what is undoubtedly true, namely that the ante-bellum cases are open to grave doubt in spite of their apparent reliability), then the results are found to agree rather closely with those obtained by Siegel, as may be seen from the following table.

Days after onset of menses	1-9		10-14		15-23		24-26		27-28	
Sex of child	M	F	M	F	M	F	M	F	M	F
Pryll, 25 cases	4	2	4	4	2	5	0	0	5	0
Siegel, 115 cases	48	8	10	14	5	26	0	0	4	0

This shows that in the period during which over-ripe ova were impregnated, that is, two days before to nine days after onset of menstruation, 82 per cent. (Pryll) and 86 per cent. (Siegel) boys were the result, and that immediately after ovulation, that is, from the fifteenth to the twenty-third days, there were 71 per cent. (Pryll) and 84 per cent. (Siegel) girls.

Siegel's observations are at variance with those of both Boissard and Freeborn, which are, in turn, at variance with each other, but Siegel's evidence is unquestionably more convincing than that of the others.

One thing seems to be fairly generally believed, however, and that is that young ova tend to produce females and over-ripe ones males. The plausibility of this is by no means impaired by the previously cited findings of McClung, Wilson, and others, regarding the sex-determining chromosome arrangement in the germ cells; for, if with McClung we believe that there are male and female spermatozoa, it may be, as before suggested, that young ova are especially receptive to sperm-cells containing the accessory male chromosome, and *vice versa*; or, if Wilson's contention is true that the ova are the deciding factors, it is possible that youthful eggs possess greater affinity for spermatozoa with symmetrically paired chromosomes.

Much remains to be done to solve this most interesting and intricate problem, but the beginning that has been made foreshadows better knowledge of it and perhaps complete solution.

H. U.

THE VALUE OF ILLUSTRATIONS

The value of illustrating published medical articles cannot be emphasized too much. No word picture can portray a diseased organ, a microscopic field, an X-ray finding, a piece of apparatus, or a visible therapeutic result, as well as a good reproduction of a photograph or a drawing. Otherwise good articles are often not read because they lack illustrations. Lengthy discussions and descriptions are not only tedious and tiresome, but they often do not convey an accurate impression of what they describe. A good picture, with few explanatory remarks, interests the reader and ensures a greater degree of comprehension of the author's meaning. The GAZETTE, therefore, urges its contributors to let sufficient numbers of photographs, drawings, or charts accompany their manuscripts. To be sure, profuse illustration increases materially the cost of publication, but we stand ready to shoulder additional expense if thereby we enhance the value and increase the usefulness of our journal.

NECESSITY KNOWS NO LAW

The rapidly increasing fighting forces of the United States Army, so familiar to every doctor who reads the lay papers, must impress him with the fact that the Medical Reserve Corps must keep apace in the way of expansion.

With every thousand men in the fighting forces, there must be ten medical officers, so it is a matter of simple calculation to figure the requirements of the Surgeon General's Office in the number of medical officers that must be at the command of the Surgeon General when required.

With three million men in the United States Army by the end of August, this means 30,000 doctors, and there are now less than 20,000 on the active list of the Medical Reserve Corps. In addition to the number required for immediate assignment with troops, a large Reserve Corps should be at the command of the Surgeon General so that when the necessary number is required they will be at his disposal.

The doctor is the most favored of all professional men in the matter of his assignment. The lawyer, as an example, when drafted or when he voluntarily offers his service and assigned to duty, draws \$30.00 a month pay. The lowest pay accorded a medical officer is \$2,000.00 a year, with additional pay for commutation of quarters for dependents.

It is the belief of the Surgeon General that a sufficient number of physicians will voluntarily come forward and offer their services as medical officers, and we therefore must do our duty not only to our country, but to those who are so admirably conducting this war in which we are now engaged.

A large and well trained Medical Corps is absolutely essential, as 80 per cent. of the casualties are returned to the line through its ministrations, and it must not be a matter of history that a sufficient number of medical officers have not volunteered their services to care properly for the mobile forces, attend the wounded and sick in hospitals, or to supply any other demands of the Surgeon General.

Five thousand physicians a month for an indefinite period are required; and those doctors who are of the opinion that other physicians in their immediate neighborhood are better qualified or have less responsibility than

themselves, should, in view of the crisis now facing us, subjugate their individual opinion and apply to their nearest Examining Board for a commission in the Medical Reserve Corps.

A Medical Reserve Corps should be what its name implies, a corps of reserve physicians upon which the Surgeon General may call; and this country today should have a reserve corps of not less than 50,000 doctors, and every physician should feel it his duty to be part of this organization.

WHY SHOULD THE SURGEON GENERAL APPEAL FOR MEDICAL OFFICERS?

Of the 146,000 doctors in the United States, it is a safe calculation that at least 70,000 are within the age limit, from 21 to 55 years, and are physically and morally qualified to serve as Medical Reserve Corps officers.

Why, in view of this fact, the Surgeon General's Office should be unable to secure a sufficient number of medical officers to supply immediate demands and to furnish a reserve force of between forty and fifty thousand doctors is not quite comprehensible.

Every qualified physician, knowing how essential his services are to his country at this particular time, should consider it not only his duty, but a privilege to take part in this glorious struggle for humanity and democracy.

This is the time when individual opinion must be sacrificed for the benefit of the whole, and the time is near when every doctor must be in one or two classes: either a member of the Medical Reserve Corps, United States Army, or in the Volunteer Medical Service.

If you are between 21 and 55 years old and there is a doubt in your own mind as to whether or not you are qualified, let the Surgeon General determine this matter by applying at once to your nearest Medical Examining Board for a commission in the Medical Reserve Corps.

REVIEWS HOMŒOPATHIC PERIODICAL LITERATURE

Homœopathic World, March, 1918

1. *Aconite*. 92. Anon.
2. *Rediscoveries*. 101. R. A. M. C.

An interesting article on the confirmations of homœopathy by modern science.

3. *Mr. McDonagh on the treatment of syphilis*. 106. Wheeler, C. E. Reference to an article in the January "Practitioner."

4. *Use of the repertory considering pathology*. 111. Van-Tine, J. L.

The writer maintains that symptoms are more important than pathology in selecting the remedy.

May, 1918

5. *The choice and mode of administration of the remedy*. 178.

This long and unsigned article is one of the best it has been the pleasure of the reviewer to read. It is written exceptionally well, and its contents bear witness to the reasoning

power and erudition of its author. It does not lend itself to abstraction but should be read in the original.

June, 1918

6. *Nux Vomica*. *Tincture or trituration of the seeds of the Strychnos nux vomica plant.* 225.

Depression and paralysis follow the violent stimulation of strychnin. Indeed, greater fatigue is in evidence under strychnin than normally, though its appearance is delayed. Although strychnin is undoubtedly the similitum of tetanus, yet the use of anti-tetanic serum has shown that once the toxin has become fixed in the spinal cord and the symptoms resulting therefrom appear, the curable stage is usually past. Therefore, the value of strychnin in this disease should be greatest before the characteristic spasms appear.

The remainder of the article is a well-written relation of the symptomatology of nux vomica.

7. *Lycopodium*. *Lycopodium clavatum (club moss): trituration of spores or ethereal tincture of spores.* 234.

Within the outer coating of the spore of lycopodium is an oily layer wherein seem to reside most of the medicinal virtues of the drug, and trituration by rupturing the spore sets this free. The oil is extracted with ether, and an ethereal tincture may be used; but there are also mineral salts in the spores, which probably count for something in the pathogenesis. Prominent among these are silicon and aluminum, and a resemblance to the former in the provings is apparent.

July, 1918

8. *Sulphur*. 266.

A large dose of sulphur readily causes laxative action with little or no absorption; that is, a local effect is obtained and not a general one; but if the drug is taken in small repeated doses, insufficient to produce at once active purging, then it is readily absorbed, and profound effects may be produced. This is tacitly admitted by all physicians who make use of sulphur springs for chronic joint diseases and other conditions, because the amount of sulphur in most of these springs is not large. In the famous ones at Aachen, for instance, there is only one gram of sulphur to 250 liters, yet its virtues are renowned.

It must be remembered that a small but essential quantity of sulphur is contained in albumen molecules, so that it is not surprising that only slight disturbance of sulphur equilibrium should have marked effect.

Certain experiments show an increase in urea excretion under the influence of sulphur, which suggests that metab-

olism is accelerated and which may account for the value of the drug in hastening elimination of metallic poisons.

Professor Hugo Schulz of Greifswald, almost alone among non-homœopathic physicians, has a clear conception of the powers of sulphur. In this as in other matters his researches have led him to conclusions largely accordant with those of homœopathy, as he freely acknowledges, but the independence of his investigations adds great value to his confirmations of homœopathic experience. He has had sulphur "proved" under his own direction, and bases his clinical uses of it upon these findings.

9. *Bryonia*. 284.

Bryonia appears sometimes in old school drug lists, with recommendations as to its use in pleurisy and arthritis. Its provings and homœopathic experience amply confirm its value in these spheres, and the recommendations are probably unconscious echoes of homœopathic therapeutics.

[It is not customary to list unsigned articles in this department of the GAZETTE, but the above from the May, June, and July issues of the *Homœopathic World* of London, England, are of such excellence that they merit mention and even more extensive abstraction than can here be given them.]

Journal of the American Institute of Homœopathy, June, 1918

10. *Syzygium jambolanum* in the treatment of diabetes mellitus. 1489. Kramer, A. S.

As the result of laboratory experiments upon animals and observation of results obtained with fourteen diabetic patients, K. comes to the following conclusions:

"1. *Syzygium* retards diastatic activity.

"2. *Syzygium* in some manner stimulates the pancreas to increase the oxidation of the dextrose in the muscle.

"3. *Syzygium* decreases the dextrose in the urine of diabetics if the blood is not greatly de-alkalinized.

"4. If the alkalinity of the blood is greatly diminished, the acidity should first be reduced by administration of bicarbonate of soda in double gelatine capsules before the *syzygium* treatment is instituted.

"5. When there is a great loss of phosphates by excretion in the urine, give calcium lactate to combine with the acid phosphates of the blood to form normal calcium phosphate, which will not pass out so readily in the urine, and then give *syzygium*.

"6. *Syzygium* is not indicated in glycosuria due to pituitary over-activity. It probably is also not indicated when the glycosuria is due to purely nervous conditions.

"7. *Syzygium* is not as efficient in glycosuria of renal

origin as in that of pancreatic origin. This is shown by the fact that in phloridzin glycosuria (. . . usually renal in origin) the reduction of dextrose in the urine was not as marked as in supra-renal and pancreatic glycosurias."

11. *Clinical verifications*. 1496. Tuttle, E. M.

12. *Treatment of diabetes mellitus in general practice*. 1499. Honn, Wm. H.

13. *Gonococcic infections in general practice*. 1505. Hill, S. A.

14. *Hahnemann Hospital diets*. 1509. Pearson, W. A.

15. *Duodenal ulcer*. 1515. Fowler, W. F.

16. *The second stage of labor*. 1521. Humphrey, W. A.

17. *A page from experience*. 1529. Cooke, M. A.

18. *The basis of the practical study of dietetics in our medical schools*. 1533. Woodbury, B. C.

W. urges that foods as well as drugs be "proved" in healthy human individuals. Symptoms obtained thereby ought to prove valuable to the physician prescribing a diet for his patient in that the disease symptoms corresponding to certain food symptoms would indicate the kind of food to be eliminated from the diet.

19. *Herpes zoster ophthalmicus: report of a case treated by pericorneal neurotomy*. 1545. Cross, A. E.

20. *Convergence insufficiency—uniform schedules for case reports*. 1549. Suffa, G. A.

This is a critical analysis of an article by Wells in the December, 1917, issue of the *Journal of Ophthalmology, Otology and Laryngology*.

July, 1918

21. *Service: Address of the President*. 9. Lee, J. M.

President Lee states that an endowment of ten millions of dollars is required to revise and re-write our pharmacologic text-books and to restate our principle and our whole theory so that every scientist may read about it and understand it. All remedies in practical use should be included in a single treatise, and all collateral sciences should be employed to bring it up to date. Were it not for the soundness of the underlying principle of our system, the false theories surrounding it would have wrecked it long ago.

22. *The importance of controls in drug-proving experiments*.

23. Hastings, W. S.

In considering the errors to which a drug proving is subject, we may place them in two classes—those due to suggestion, and those coming from a failure to recognize events occurring incidentally or accidentally in the course of the proving.

Errors due to the first cause are easily avoided by withholding the name of the drug from the prover; but those due to intercurrent and accidental causes are not so easily prevented.

23. "*Homœopath protests.*" 27. Carmichael, T. H.

24. *Venereal diseases and the war.* 29. Sprague, E. R.

25. *Diagnosis of pulmonary tuberculosis.* 34. Wolcott, E. H., and Lloyd, J. J.

26. *Pulmonary tuberculosis: some experiments in early diagnosis.* 38. Grosvenor F. B.

27. *Focal infection: its relation to systemic disease.* 43. Jewett, D. B.

28. *The signs of the times.* 51. Southwick, G. R.

29. *The present status of intraspinal therapy in syphilis.* 53. Ogle, A. A.

Syphilis should be a reportable disease and should not be treated by the general practitioner, unless he be willing to familiarize himself with the newer methods of treatment and supply himself with the armamentarium requisite for early diagnosis.

In tabes, intraspinal treatment is of decided benefit in the inflammatory stage, and in late stages, if persistently employed, will afford more and longer remissions than any other form of therapy. In advanced cases of paresis the method is practically useless.

30. *Empyema of both frontal sinuses with unusual complications.* 77. Rice, G. B.

31. *The responsibility of the anesthetist to the operator in mastoid surgery, especially the radical mastoid operation.* 80. Conrad, G. W. H.

32. *Taking stock of our homœopathic colleges.* 85. Cushing, G. M.

In 1917 there were 144 homœopathic graduates in the United States. Nine per cent. of them failed before various state boards. At the same time, 5.6 per cent. of all graduates of all schools failed, indicating that the percentage of homœopathic failures was 3.4 higher than the general average. From *Class A* homœopathic colleges 54 graduates passed and 3 or 5.5. per cent. failed, which is slightly better than the general average; but from homœopathic colleges in *Class B*, 67 passed and 13 failed, a percentage of 19.4.

Today medical colleges are subject to regulation and examination not only by the various state licensing boards but also by the Surgeon General's office, and it may well be asked what the Surgeon General, with these facts and data before him, may feel called upon to do. He might issue an order, since *Class A* colleges show fewer failures than those in *Class B*,

that all students from homœopathic colleges in *Class B* be transferred to *Class A* colleges of that school; or he might insist upon the transfer of enlisted men from a weak school to any school offering adequate training.

It is imperative that all homœopathic colleges not now classified in *Group A* by the Council on Medical Education of the American Medical Association make immediate effort to be so classified; because the damage resulting from the transfer of students from one of our colleges to another school would not merely affect the college involved but would be a severe blow to homœopathy in general.

The Indian Homœopathic Review, September, 1917

33. *Dyspepsia — a misnomer.* 251. Dass, H. B.

"It is the general tendency of some of the less careful medical men to regard every form of gastric or intestinal derangement, due to disease of some other organ, e.g., chronic appendicitis, phthisis, pneumonia, biliary colic, etc., as dyspepsia and to treat it as such without understanding the fundamental cause of the failure of digestion."

The Pacific Coast Journal of Homœopathy, May, 1918

34. *State board operation and statistics.* 215. Pinkham, C.

35. *Two cases of ectopic pregnancy.* 227. Hill, M. W.

The treatment of ruptured ectopic pregnancy is purely surgical. It must be decided whether the operation shall be immediate or whether the patient shall be allowed to recover from the shock of the first hæmorrhage. Whereas formerly it was considered imperative to operate immediately, more recently there has developed opposition against immediate operation in all cases. It is held that the time of operation should be determined by the patient's fitness to withstand surgical interference, but that the period of election should be as early as possible.

36. *Multiple Cæsarian section.* 232. Ward, F. N.

W. relates a case in which Cæsarian section was done twice, the first time because of the development of uræmia, the second time because of placenta prævia. To prevent other pregnancies, both Fallopian tubes were severed close to the uterus, both ends tied, inverted into the broad ligament and securely covered with peritoneum.

37. *Terminal stages of dementia paralytica.* 238. Webster, M.

38. *An ordinary case.* [Otitis media.] 240. Barndt, M. A.

39. *Paraffin in the treatment of burns as developed in the present war.* 242. Stiles, W. H.

Several mixtures consisting of paraffin and varying proportions of wax, resin and oil are on the market at present as substitutes of the difficultly obtainable French "ambrine." The technic of application to burns is as follows: Before the application the wound should be cleansed, preferably with Dakin's solution, and made as nearly sterile as possible. Then the burned area should be thoroughly dried, either by exposure to air or by gentle fanning. A block is cut from the wax cake and put in a closed vessel, which is immersed in water and heated until the wax is melted. The melted mixture at about 150°F. is then sprayed or painted over the involved area, where it quickly cools and forms a thin film. Over this is placed a thin layer of cotton or a slit piece of sheet wadding and a second film of paraffin mixture painted, sealing the cotton to the skin at the edges. Then comes a heavy layer of cotton, and finally a bandage is applied. If the injured surface is moist, the paraffin film will not adhere, and pain will be caused; but if the wound is dry, then the paraffin has analgesic effect although applied at 150°F. It is inexpensive, one pound of it costing but little, and it replaces the much more costly gauze. Superficial burns heal more rapidly under this treatment than they do under others, scarring is less marked, and change of dressing is much less painful.

40. *Hay fever.* 245. Palmer, A. B.

The hodge-podge that may result from senseless abbreviations of names of remedies, especially when coupled with careless punctuations, is exemplified in the final paragraph of this article, which reads as follows:

"Remedies: Aconite, Alum, Cepha., Ars. Alb., Aralia Race, Nat. Mur., Nat. Ars., Am. Mur., Ars. Iod., Arum. triph Badiaga., Bell. Camphor Euphrasia. Gels. Grindelia. Ipec. Kali Bich., Lach. Merc., Nit ac. Nux Vom., Op. plus., Sang. Tar Em. and many others."

The Chironian, March, 1918

41. *February, 1918, Commencement Address: Military medicine and some of its accomplishments.* 398. Thomason, H. D.

42. *The mental examination of the insane from a general practitioner's point of view.* 418. Kelly, W. E.

43. *Relation of eye diseases to general diseases.* 432. Boyle, C. C.

April, 1918

44. *Indications and contraindications for lung surgery.* 449. Jost, T. A.

45. *Anæsthesia by intra-tracheal insufflation.* 404. Palmenten, B. B.
 46. *Additional anæsthesia facts in lung surgery.* 457. Eaton, E. R.
 47. *Empyema thoracis.* 460. Hayner, J. C.
 48. *Discussion of paper on empyema.* 467. Imperiale, R. I.
 49. *Abscess of the lung.* 472. Thornhill, G. F.
 50. *Tuberculosis of the lung.* 479. Berkowitz, W. E.
 51. *Discussion of "tuberculosis of the lung."* 482. Levine, B.
 52. *Gunshot wounds of the lung.* 484. O'Connell, W. L.

GENERAL MEDICINE

Transfusion: Experiences in over two hundred cases. Kimp-ton, A. R. *Bost. Med. & Surg. Jour.*, 1918, clxxviii, 351.

Transfusion finds its greatest field of usefulness in acute secondary anæmia due to severe hæmorrhage, particularly in hæmorrhage of neonati. Bleeding attacks in hæmophilics are usually stopped. Transfusion may be of value in chronic secondary anæmia but not in acute sepsis. In leukæmia it is useless; but it may produce temporary improvement in pernicious anæmia and is the most efficient treatment of this disease, offering as much as or more than splenectomy.

Acute lobar pneumonia. Shattuck, F. C., and Lawrence, C. H. *Bost. Med. & Surg. Jour.*, 1918, clxxviii, 245.

3,291 cases of lobar pneumonia treated at the Massachusetts General Hospital from 1889 to 1917 are compared with a series of 1,000 cases treated at the same institution from 1822 to 1889 and reported in the latter year by Coolidge and Townsend. From 1822 to 1917 the death rate has gradually increased from 10 per cent. to 28 per cent., but there has been no definite change in it since 1881. The increased death rate is due chiefly to greater mortality among native Americans and among men; and this may be caused by a corresponding increase in vascular disease.

"Treatment has done nothing toward diminishing the mortality from pneumonia in the past ninety-five years. Bleeding, purging, fresh air—the result has been the same." The habitual use of alcohol in more than moderate amounts diminishes the patient's chances of recovery, but giving alcohol during the disease does not seem to increase mortality. The results of anti-pneumococcus serum are encouraging but as yet limited.

Studies of infant feeding, X. The digestion and absorption of fats, 1. Calcium in its relation to the absorption of fatty acids. Bosworth, A. N., Bowditch, H. I., and Giblin, L. A. *Am. Jour. Dis. Child.*, 1918, xv. 397.

In most modifications of cow's milk for infants' food the mineral content receives very little consideration, "being passed over with the statement that modified cow's milk will always contain a larger percentage of ash than breast milk, and hence will furnish all the mineral elements necessary." Bottle-fed infants receiving cow's milk have much larger quantities of calcium soaps in their stools than have breast-fed infants. These soaps, unlike those of sodium and potassium, are insoluble; they interfere with normal fat metabolism and often cause severe constipation. So-called fat indigestion or fat intolerance is more often due to the excessive amount of calcium in cow's milk than to primary derangement of the infants' fat metabolism. The authors have perfected a method by which nearly all the calcium may be removed from cow's milk, and the use of such nearly calcium-free milk has produced favorable results in cases classed as "infantile atrophy" and "fat intolerance." The details for the preparation of the reconstructed milk are to be published later.

Cardiac syphilis. Moore, W. C. *Am. Jour. Med. Sci.*, 1918, clv, 660.

The heart is actively syphilitic much more often than is usually recognized, and cardiac lesions may occur as early as the secondary stage. Congenital syphilis of the heart, usually unsuspected clinically, may cause sudden death in children. The pathological process found microscopically at autopsy is usually a myocarditis; treponemata may be found in the lesions. Uncomplicated aortic insufficiency is in most cases of syphilitic origin. The diagnosis of cardiac syphilis depends mainly upon the signs of cardiac disorder in individuals with a positive Wassermann reaction, and upon a response to anti-luetic treatment. The prognosis varies directly with the progress of the disease, being good in the early stages. Direct cardiac treatment is rarely required except in cases with decompensation.

BOOK REVIEWS

Principles and Practice of Infant Feeding. Julius H. Hess, M.D.; Major M. R. C., U. S. Army, Active Service; Professor and Head of the Department of Pediatrics, University of Illinois College of Medicine; Chief of Pediatric Staff, Cook County Hospital; Attending Pediatrician to Cook County, Michael Reese, and Englewood Hospitals, Chicago. Pp. 338. Illustrated. Price \$2.00. F. A. Davis Co., Philadelphia, 1918.

The author's name is perhaps the best recommendation for this book on infant feeding. In its four parts are taken up, first, the anatomy, physiology and bacterial flora of the digestive tract of the infant, and the metabolism of infants; second, nursing; third, artificial feeding; and fourth, nutritional disturbances in artificially fed infants; and in an appendix are detailed many miscellaneous matters of useful nature. The book is comprehensive and yet concise, and although apparently intended primarily for perusal by the medical profession, it is so written that it is intelligible to educated lay mothers as well as to physicians.

H. U.

The Treatment of Cavernous and Plexiform Angiomata by the Injection of Boiling Water (Wyeth Method). Francis Reder, M.D., F.A.C.S., Visiting Surgeon to City Hospital; Consulting Surgeon to St. John's Hospital and Missouri Baptist Sanitarium, St. Louis. Price \$1.50. Pp. 75, illustrated. C. V. Mosby Co., St. Louis, 1918.

This is a little monograph upon a most interesting and often to the surgeon a most troublesome condition. Dr. Reder reports 104 cases which he has treated successfully by the injection of boiling water. The results leave but little doubt that the Wyeth method is superior to all other lines of treatment in these conditions. The technique of the injections and the possibilities of complications are carefully considered. It should prove a most valuable guide to the surgeon who is called upon to treat cases of this sort.

C. T. H.

PROPOSED LEGISLATION CONCERNING VENEREAL DISEASES

In the House of Representatives, May 18, 1918, Mr. Miller of Washington introduced the following bill; which was referred to the Committee on Interstate and Foreign Commerce and ordered to be printed.

A BILL to conserve and increase the industrial man power of the United States; to increase the efficiency of the military and naval forces thereof; enlarging the powers of the Public Health Service by creating and establishing a Division of Venereal Diseases therein; providing for the punishment of immoral persons afflicted with venereal disease who go or attempt to go from one political division into another, and persons who assist or connive at the same; establishing internment hospitals; authorizing the Secretary of the Treasury to establish all needful rules and regulations relating to the subject matter of this Act; and authorizing an appropriation therefor.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That there is hereby created and established in the Public Health Service a division known as the Division of Venereal Diseases.

Sec. 2. That upon the passage of this Act the Surgeon General of the Public Health Service shall appoint an Assistant Surgeon General to take charge of the division hereby created; or the Surgeon General may appoint a commissioned medical officer in the Public Health Service to take charge of said division, which officer shall have the rank of Assistant Surgeon General while performing said service and duty.

Sec. 3. That the Public Health Service, under such rules and regulations as the Secretary of the Treasury shall prescribe, shall, in addition to the duties, powers, and authority now vested in it by law, have power and authority (a) to study, investigate, and conduct research work into the cause, prevention, and treatment of venereal diseases; (b) to construct,

acquire, purchase, lease, or otherwise obtain internment hospitals, and to equip, manage, conduct, and operate the same; (c) to administer and apply medical treatment to persons afflicted with venereal disease while in said internment hospitals, and to issue orders of discharge therefrom upon cure; (d) to cause the arrest and prosecution of immoral persons afflicted with venereal disease who go or attempt to go from one political division into another, and to cause the arrest and prosecution of persons who aid, assist, or connive at the same; (e) to receive at such internment hospitals and to have authority and custody thereof for the purpose of examination or medical observation or treatment of all immoral persons afflicted with or thought to be afflicted with venereal disease, who are delivered to or turned over to the officer in charge of any such internment hospital for the purpose of examination or medical observation or treatment by any State, county, city, or town board of health or health department, or officer or agent thereof, or by any civil or military court, sheriff, police, or peace officer of any State, county, city, or town, or by the military or naval authorities of the United States; (f) to detain for purposes of medical observation or examination and treatment any immoral person going or attempting to go from one political division into another, and to commit any such person afflicted with venereal disease to an internment hospital; to administer medical treatment to such person and have legal custody thereof; (g) to cooperate with State, county, city, and town boards of health or departments and health officers of States, cities, counties, and towns in the prevention, treatment, and cure of venereal diseases, and to prevent the spread thereof; (h) to make all needful, necessary, and convenient rules and regulations to carry out the purposes of this Act not in conflict with the rules and regulations of the Secretary of the Treasury; (i) to appoint all necessary superintendents, physicians, keepers, agents, guards and other officers necessary or convenient to carry out the purposes of this Act, and to define their duties and compensation.

Sec. 4. That it shall be unlawful for any immoral person afflicted with syphilis, gonorrhea, chancroid, or other venereal disease capable of being communicated to another person, to go or attempt to go from one political division into another. Any person violating the provisions of this section shall be declared guilty of a felony and upon conviction thereof shall be punished by a fine of not less than \$500 nor more than \$1,000, or imprisonment for not less than six months nor more than one year, or both such fine and imprisonment in the discretion of the court.

Any person who shall aid, counsel, connive at, abet, or assist any person in the violation of this Act shall be declared guilty of a felony and upon conviction shall be punished by a like fine or imprisonment, or by both such like fine and imprisonment in the discretion of the court: *Provided*, That this section shall not apply to immoral persons afflicted with venereal disease going from one political division into another in charge of the officers of the United States or of any State, county, or city, nor any officer having charge of such persons; nor shall it apply to any such immoral person when in charge of a member of the military or naval forces of the United States, or a member of the military or naval forces of the United States when acting under orders of his superior officer.

Sec. 5. That the term "political division" as used herein shall mean any State, district, or insular possession of the United States.

Sec. 6. That the term "immoral person" as used herein shall include any bawd, prostitute, or female who practices sexual intercourse out of wedlock for or without hire or thing of value; or any man who consorts with, associates, or companions with any immoral woman, or who loiters about or frequents any bawdy house or brothel; or any bawd or other lewd or licentious person.

Sec. 7. That in all prosecutions under sections four and ten of this Act it shall be sufficient to state in the complaint, information, or indictment the facts generally in plain and concise language, without repetition, in such way as to constitute a complete crime and in such manner that a person of ordinary understanding can know what is intended; and no complaint, information, or indictment so drawn shall be declared insufficient by reason of the lack of particularity in the allegations contained therein.

Sec. 8. That the Secretary of the Treasury is hereby authorized to construct, acquire, purchase, lease, or otherwise obtain internment hospitals for the treatment of persons afflicted with venereal disease at such locations as in his judgment are most advantageous and convenient for carrying out the purposes of this Act.

Sec. 9. That it shall be the duty of the Public Health Service or any agent or officer thereof in charge of any such internment hospital, to receive into such station or hospital and to administer medical and surgical treatment to any person afflicted with syphilis, gonorrhea, chancroid, or other venereal disease capable of being communicated to another person who has been turned over to or delivered to the officers in charge of such detention or internment station or hospital by any State, county, or municipal board of health or health officer, civil or military court, sheriff or civil peace officer, military or naval authorities, and detained or held therein for the purpose of examination or medical observation or treatment upon the payment by such State, county, city, or municipal corporation of the actual expenses incurred by the Public Health Service in the care, keeping, and treatment of such detained or interned person, and the custody of such detained or interned person for such purposes by the Public Health Service, is hereby declared to be in all things legal: *Provided*, That the State, county, city, or other municipal division by the enactment of a law, by-law, ordinance, or other legislative enactment of general application shall so provide if provisions be necessary.

Sec. 10. That it shall be unlawful for any person while detained or interned in any such internment hospital and while undergoing medical or surgical treatment or observation therein to leave or escape from the hospital wherein such person is in custody without being discharged by the officer of the Public Health Service in charge of such internment hospital. Any person who violates the provisions of this section is hereby declared to be guilty of a misdemeanor, and upon conviction thereof shall be punished by a fine of not less than \$100 nor more than \$500, or imprisonment not less than 30 days nor more than six months, or both such fine and imprisonment in the discretion of the court.

Any person who shall aid, counsel, connive at, abet, or assist another person in the violation of the provisions of this section shall be declared guilty of a misdemeanor and upon conviction shall be punished by a like fine or imprisonment, or by both such like fine and imprisonment in the discretion of the court.

Sec. 11. That the Secretary of the Treasury is hereby authorized to make all necessary rules and regulations relating to the discipline, vocational, educational, and moral training of all persons detained or interned in such internment hospitals, and the Public Health Service is hereby authorized to make such additional rules and regulations not in conflict herewith as shall best serve the purposes of this Act, always keeping in view the discipline, physical, vocational, educational, and moral betterment of the person detained or interned.

Sec. 12. That the Congress hereby declares it to be the policy of the United States that immoral persons afflicted with venereal disease when at large going from one political division into another are dangerous to the public health and inimical to the welfare and happiness of the people.

Sec. 13. That jurisdiction is hereby conferred upon United States commissioners to hear and determine as examining magistrates all violations of this Act creating or defining misdemeanor or felony, and if upon such hearing it shall be established to the satisfaction of the commissioner that the person charged is afflicted with syphilis, gonorrhea, chancroid, or other venereal disease capable of being communicated to another and also that there is reasonable ground to believe such person is guilty of the misdemeanor or felony charged, he shall have full and complete jurisdiction in the premises to issue mittimus of commitment, committing such person to an internment hospital for medical observation or treatment as in this Act provided, during the interim of time between such hearing and the date of the trial, notwithstanding such person's ability to give or having given bond

to answer and appear before the court to which such person is held on the crime charged.

Sec. 14. That the United States district court of the various districts shall have full and complete jurisdiction in all misdemeanors and felony cases defined by this Act and shall have full and complete jurisdiction to enter judgment therein and shall at all times have jurisdiction to issue mittimus of commitment in proper case to any internment hospital.

Sec. 15. That in all prosecutions under sections four and ten of this Act, if it shall be ascertained, either prior to or at the hearing before the commissioner or prior to or at the trial, that the person charged with felony or misdemeanor, as the case may be, is afflicted with syphilis, gonorrhea, chancroid, or other venereal disease capable of being communicated to another, the commissioner or the judge, as the case may be, may issue his mittimus of commitment committing such person to an internment hospital for medical observation or treatment, and the hearing or trial may be ordered continued until such person shall have been discharged by the proper authorities from said hospital as cured, and that during said period of time the statute of limitations shall not be in operation.

Sec. 16. That if any section, paragraph, clause, or part of this Act shall be held by any court to be unconstitutional, such holding shall apply to and be limited to the section, paragraph, clause, or part under judicial consideration, and the court shall not hold the entire Act as unconstitutional, but the remainder of the Act not affected by the judicial construction or interpretation shall remain in full force and effect.

Sec. 17. That there is hereby authorized to be appropriated out of the moneys of the Treasury not otherwise appropriated, the sum of \$3,500,000, or so much thereof as may be necessary, to carry out the purposes of this Act.

ENROLLMENT OF PHYSICIANS

On August 8th the following statement was authorized by the War Department, signed by Newton D. Baker, Secretary of War:

"The War Department today has suspended further volunteering and the receipt of candidates for officers' training camps from civil life. This suspension will remain in force until the legislation now pending before the Congress with regard to draft ages is disposed of and suitable regulations drawn up to cover the operation of the selective system under the new law. . . ."

Fearing that this order might be misinterpreted by doctors who would not distinguish between enlistment as a private soldier and enrollment as an officer in the Medical Reserve Corps, on August 9th I asked the Secretary of War to issue a statement making clear this point.

In response to this request on August 10th the following statement was authorized by the War and Navy Departments:

"Orders issued by the War and Navy Departments on August 8th suspending further volunteering and the receipt of candidates for officers' training camps from civil life do not apply to the enrollment of physicians in the Medical Reserve Corps of the Army and the Reserve Force of the Navy. It is the desire of both departments that the enrollment of physicians should continue as actively as before so that the needs of both services may be effectively met.

(Signed) JOSEPHUS DANIELS

Secretary of the Navy.

(Signed) NEWTON D. BAKER

Secretary of War."

It is desirable that the definite attention of the medical profession be called to this interpretation in order that enrollment for the Medical Reserve Corps of the Army and the Reserve Force of the Navy, which is going on so rapidly at the present time, shall not be interrupted.

COLOR-BLINDNESS AMONG U. S. SEAMEN

The importance of differentiating between those who are dangerously color-blind—that is, unable at all times to distinguish between red and green—and those who are only slightly color-blind, is brought out in a recent study conducted by the U. S. Public Health Service and reported in Public Health Bulletin No. 92.

The following classes are regarded as dangerously color-blind and therefore to be excluded from positions in which they would be required to read colored signal lights: (1) those who are able to see but three or less colors in the spectrum (the normal person sees six or seven); (2) those who see more than three colors in the spectrum, but who have the red end so shortened as to prevent the recognition of a red light at a distance of two miles; and (3) those with a central scotoma (that is, a blind or partially blind area in the field of vision) for red and green.

It was concluded that this class of persons could be distinguished from those harmlessly color-blind by the use of the Edridge-Green color lantern, which was found preferable to colored yarns. The theories on which the color lantern is based are given in detail in the publication.

Another feature of the investigation was the study of the prevalence of color-blindness. Excluding those able to distinguish five colors in the spectrum, it was found that color-blindness occurs in about 8.6 per cent. of men and 2.2 per cent. of women. Color-blindness of a degree dangerous in occupations requiring the recognition of colored signal lights was found to occur in about 3.1 of men and 0.7 per cent. of women. Among refractive conditions of the eye, color-blindness occurs least frequently in eyes apparently without demonstrable refractive error; it occurs most frequently in eyes showing mixed astigmatism.

The examinations were made as a part of other studies of the effect of illumination on vision, conducted as a part of an illumination survey of the federal department buildings in Washington, D. C. One thousand persons were tested with the Edridge-Green lantern to determine both the value of the lantern and the effect, if any, of refractive conditions, lesions, and anomalies of the eye, and also of sex, upon different degrees of color perception.

A special study of the Jennings self-recording worsted test was also made, 50 persons being tested with this and other tests. The results with the Jennings test were found to be too inaccurate for most work, although it was found to be superior to other tests in certain lines of work where great accuracy and the classification of color defects were not essential.

FORMULA FOR EBONIZING TABLE TOPS

The *Institution Quarterly*, official organ of the Public Welfare Service, of March 31, 1918, contains the following formula and directions for ebonizing table tops:

(1) Potassium chlorate	4
Copper sulphate	4
Water	30
(2) Aniline oil	4
Hydrochloric acid	4
Water	30

Directions: Apply No. 1 with a brush, and repeat the following day. Apply No. 2 in the same manner. After two days, scrub with soap and water. Let dry and then apply a coat of raw linseed oil, ironing it in with hot flat iron. Apply paraffin in the same manner as the oil, scraping it on the surface and ironing it well into the wood.

This is being tried at the Watertown, Ill., State Hospital, and, if successful, should be useful for dining tables in large institutions.

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ORIGINAL COMMUNICATIONS

MODERN CÆSAREAN SECTION

NATHANIEL W. EMERSON, Jamaica Plain, Mass.

At the time I graduated I had seen just one confinement, that of a negress whom Dr. Joe Chase delivered for me by forceps. The next case I was connected with, I did not see: it was all over when I got there. A woman who went out by the day to do washing was taken with labor pains while at work and returned home, in a tenement adjacent to the hospital, barely in time to have the baby delivered. A child came to the hospital frantically seeking help, and when I arrived the whole thing was over; and when I went to see the woman on the following day she had again gone out to her washing.

The next case I had anything to do with was in private practice shortly after I had opened an office. This would have been a practically normal confinement had I known enough to let it alone; in my eagerness, however, to deliver the shoulders and torso of the baby after the head was extruded, I succeeded in dislocating its neck, and consequently the child died. The following case I saw was with a surgeon then coming into prominence as an operator, to administer ether for him to apply the forceps. He put the forceps on and finally extracted the child by putting both feet on the edge of the bed and ripping it out of the woman while I hung on to her body to keep it on the bed. Of course, she was horribly torn.

By this time I was scared and came to the conclusion that I was not meant for an obstetrician. The whole thing impressed me with such horror that I have never gotten over it. The result of it was that after I had thought it out I made up my mind to increase my knowledge of obstetrics; and then, for the first time I began to have intelligence about it, so that I finally had a not inconsiderable obstetrical practice.

When I went to Europe the first time I gave almost as much attention to obstetrics as I did to surgery, and I have never regretted it. There I became much interested in Cæsarean section, for the reason that I became a student of Professor Leopold of Dresden, one of the best operators I have ever seen. He had given more attention to Cæsarean section, at that time, than anyone else in the world, and had also operated more cases than anybody else; in fact, his book, was at that time the last word upon the subject. This was in 1890-1891.

When I returned one never heard of Cæsarean section here, and the method then recommended and adopted, whenever it was rarely practised, was the low incision above the pubes sufficiently large to deliver the pregnant womb. Extraordinary measures were taken to control the hæmorrhage. Indeed, hæmorrhage was a bug-a-boo, as it has been in so many other cases; to prevent it, either a ligature was thrown around the uterus, or someone was delegated to grasp it with both hands as low down as possible while it was opened and the child removed. The same difficulty obtained here in the advancement of this operation as obtained for a long time in the advancement of the operation for fibroids. The dominating thought in all the earlier operations was that we must first of all prevent hæmorrhage. The old supra-vaginal amputation of the uterus in cases of fibroid was controlled by the same idea as caused the using of ligatures in Cæsarean section at that time, and in the case of both operations the method as finally adopted was so simple that one wonders it took so long for it to have been developed.

In hysterectomy we now know that if the uterine and ovarian arteries are secured, the blood supply is controlled; that no matter how great the tumor, unless it is much complicated by adhesions, there is no additional blood supply; it must all go through these original channels. Hence, if these vessels are secured at the beginning, there is no hæmorrhage of any kind. The same obtains in the operation for Cæsarean section. Nature meant that there should be considerable hæmorrhage at the time of the separation of the placenta; this only drains from the tremendously enlarged uterus the blood which it contains and which has served its purpose, and is undoubtedly meant to be gotten rid of and not returned to the general circulation. The very act of emptying these vessels controls future hæmorrhage, stimulates the contraction of the uterus, and with its contraction causes sliding of the muscles upon each other in such a way that many of the vessels are occluded. Therefore, when the placenta is delivered, the uterus contracts, and the hæmorrhage is controlled. Only then do we

get a post-partum hæmorrhage when for some reason or other the uterus does not contract. In delivering by Cæsarean section there should be hæmorrhage at least equivalent to what will occur during normal delivery after the placenta is separated; and although this hæmorrhage occurs with exceeding rapidity and is somewhat appalling unless one understands, yet as soon as the placenta is delivered the uterus begins to contract, with the result that the hæmorrhage lessens. In all of my cases, without exception, at the time we were ready to close the wound there was no further hæmorrhage from the uterus.

In order for the operation to be successful, irrespective of the indications for it, the one paramount necessity, to my mind and in my experience, is that the os should be open sufficiently to admit a finger, and the wider the opening the better I like it. This is so that after the uterus is closed there shall be perfect drainage. In a premature delivery, if the os is not open, there may be a retained hæmorrhage in the uterus which might put it under tension sufficiently far to penetrate the wound, and under certain circumstances result either in sepsis or in such distension and separation of the uterine wound as will result in faulty healing. Should this occur, it may be followed by rupture of the uterus in a subsequent pregnancy. If the cervix is open sufficiently to prevent backing up of the blood in the uterus perfect drainage results, and danger of sepsis or over-distension is practically eliminated.

The operation itself as favored by me is as follows: The abdomen is opened by an incision about four and a half inches long, just to the left of the umbilicus. In a case at full term (and the nearer one can approach full term as a time of election for the operation the more favorable all the circumstances are), the abdominal wall is tremendously thinned out, so that in many cases no muscle fibre is seen when the incision is made, and if one is careless one might injure the viscera. This incision is made with incredible ease and rapidity, at once exposing the uterus. An incision corresponding to that in the abdominal wall is then made into the midline of the anterior wall of the uterus, also about four and a half inches long. It is the hæmorrhage resulting from this that to the novice would seem appalling and uncontrollable, and, to be sure, for a moment it is fierce. But disregarding the bleeding, one goes directly through into the uterus introducing a hand, finds the lower extremities, delivers them through the opening, immediately followed by the body, the upper extremities and the head. Sometimes at this point the uterus begins to contract quite firmly, and in two or three cases I have found it necessary to deliver the arms and head practically as one

would *per vaginam*; that is, one sweeps the arms across the chest, and in one of my cases it was even necessary to introduce a finger into the mouth of the child to obtain sufficient purchase to roll the head out; this was because of the firm contraction of the uterus, which is no cause for haste or anxiety, but rather a fine indication that the uterus will take care of itself when one is ready to release it.

The first rush of amniotic fluid and blood obscures everything, but with the delivery of the child there is almost instantaneous contraction of the uterus, and the hæmorrhage lessens. The placenta is then delivered, and in no case have I had the slightest difficulty in doing this, and invariably as soon as the placenta with its membranes was removed, the uterus had diminished very materially in size and had entirely changed its aspect. At this stage it tends to retract from the wound, and a tenaculum forceps is placed in the upper angle of the wound in the uterus to lift the latter so that the incision in the uterus corresponds to that in the abdominal wall. This fills the lumen of the abdominal incision and prevents extrusion of the bowel.

Holding the uterus in the incision, I usually put a No. 4 Catgut as an interrupted suture at the lower angle of the uterine incision. I have placed this in various ways and have seen no difference in the final outcome. Sometimes I have put it through in such a way that when it was tied the knot was just below the incision. Again I have put it in the lower angle of the incision making it entirely subperitoneal so that when the knot was tied it sunk out of sight, and in my opinion this is the better way. This suture is left long for the purpose of steadying the uterus while the sewing is continued. The next suture is usually an interrupted one at the upper angle of the wound corresponding to the first one and taking the place of the tenaculum forceps, which is then discarded. The rest of the wound is then sewed with the No. 4 Catgut, and while I have used both the continuous and interrupted suture, experience leads me to a decided preference for the latter. This suture is made entirely subperitoneal; that is, it enters one side of the incision just below the cut margin of the peritoneum, goes through the whole thickness of the uterine wall, and coming out just at the edge of the endometrium, enters on the opposite side of the corresponding point and comes out just beneath the peritoneum. Four or five or six of these sutures are quite enough. Then with a No. 2 Catgut and small needle, a continuous suture unites the peritoneum over the uterus and at the same time buries the deep sutures. The uterus is then released, disappears from view and is never touched again.

There is no hæmorrhage into the abdominal cavity for the reason that the enlarged uterus occupies the lumen of the incision during the period of freest hæmorrhage. The wound in the abdomen is then closed by whatever method one elects. No vaginal manipulation of any kind is made except the briefest examination beforehand to discover the condition of the os, and sterilization of the vagina after the patient is anæsthetized. The after-care of the patient is as simple as the after-care of any other abdominal case.

The time of the whole procedure from beginning to end should not average over twenty minutes. In one of my cases it required half an hour, and I have done it from beginning to end in twelve minutes.

The indications for Cæsarean section by this method have considerably widened the field for operation, and from my own experience I am very positive that the operation as simplified will be more and more adopted.

A study of the indications in the cases with which I have had personally to do is very interesting, not because of the operation, but because of the different viewpoints I have taken toward such cases.

Case I: Mrs. S. R., age 40, was operated upon July 5, 1912. She had had four pregnancies; two of the children are living; the oldest one being thirteen years old. All had been forceps cases and mal-presentations; the last child died in convulsions four hours after birth because of injury to the spine at delivery; next to the last one is the only one living and normal; the second one died of diphtheria at six; the oldest boy was injured at birth and has had epileptiform convulsions, some impediment in speech and slight paralysis of one side. The scars of the forceps on his head can be plainly seen.

When the time came for the fifth delivery, very naturally everybody connected with the case was much concerned. It was referred to me and with no hesitancy whatever I advised Cæsarean section. This was done without incident, and a female child weighing ten pounds, four ounces, was delivered.

Case II: Mrs. E. T. H., aged 29, was operated January, 1913. There was a generally contracted pelvis. Labor began at full term at 4 A.M. and continued for six hours without advancing, although the pains were proper. The presenting part was becoming oedematous, but no progress was being made. When this was reported to me I unhesitatingly advised Cæsarean section, which was performed, and a seven and one-half pound child delivered.

Case III: Mrs. E. N., aged 28, was operated upon abdominally January, 1913, expecting to have an ovary and the

appendix removed, but found later that neither of them were. She does not know what was done. Her last menstruation was May 10, 1913, and I saw her January 17, 1914. She had had excessive morning sickness continually up to the present time. When she was three months pregnant she was caught in an elevator door and jammed and bruised sufficiently to keep her in bed three weeks. She retired at 8 P.M. on the sixteenth; at 11 P.M. she had severe pain that was followed by free flow of water from the vagina, which continued together with some irregular pains. Examination showed the cervix obliterated, and the os soft, admitting two fingers. The foetus seemed large for an eight months' child. The pulse was 120, and there was general contraction of the pelvis, and marked mitral regurgitation and some hypertrophy of the heart. The decision as to what to do having been left to me I made a Cæsarean section, and her recovery was without incident. She came back in the following May, when I removed the appendix because of the presence of inflammation, thus definitely establishing the fact that it was not removed at the first operation.

Case IV: Mrs. A. B., age 33, was operated upon seven and one-half months after beginning of pregnancy. She had eclampsia. The baby lived but four hours, but the woman made a fine recovery and was discharged on the eighteenth day.

Case V: Mrs. F. E. M., aged 29, was delivered of a male child weighing five pounds, eight ounces, operation having been undertaken for dystocia. This was done at full term and was without incident.

Case VI: Mrs. H. M. F., age 40. This case was especially interesting to me. She had had one child six years before which had not lived, and both she and her husband were very desirous of a living child. She came into my care as soon as it was known that she was pregnant, and I had her under observation all through her pregnancy and as full term approached sent her to the hospital. There was marked dystocia and I had in mind through the term of her pregnancy the possibility of a Cæsarean section. After labor began at full term, examination showed that there was not only a generally contracted pelvis, but also a breech presentation. As soon as this could be determined I had no hesitancy in deciding upon operation, which was accordingly done on January 13, 1916, and she was delivered of an eight and a half pound male child. She made an uninterrupted recovery. This is the type of case which previously would have been allowed to take its own course, with the result that the mother would have been badly lacerated

and the child lost. Here all the difficulties were diagnosed in advance and safely overcome inside of half an hour, and it does not seem to me as if there could be any comparison between this method and former ones.

Case VII: Mrs. H. A. F., age 39, was a particularly interesting case. She was pregnant only about five months, but there was a placenta prævia centralis that had been bleeding. When this was surely recognized I decided to resort to Cæsarean section. A foetus at five months and after is exceedingly difficult to remove *per vaginam* without injury to the mother.

Case VIII: The most interesting case, perhaps, I have had was a Mrs. L. de L. H., age 23, operated on April 17, 1915. She had one child by instrumental delivery one and a half years ago, and six miscarriages. The child died on the eleventh day from injury to the neck and spine in delivery. There was a generally contracted pelvis. The abdomen was enormously large with obvious fluctuation, and after delivery pains had begun I determined upon a Cæsarean operation. An enormously distended uterus was found which when opened poured forth an extraordinary amount of amniotic fluid, and upon delivering the foetus it was found to be a monstrosity, and fortunately dead. It was a female, had no neck; a flat nose, no cranium, and an irregular bony mass posteriorly on a line drawn between and behind the ears. Its brain tissue was a red, irregular mass dependent in a thin sac resembling arachnoid, from a point high on the scalp to the level of the scapulæ; here was a crater-like depression of the bone, without integument. The feet and hands were large in proportion, the nails well developed, arms very long, abdomen very prominent and rounded, and there was hair on the scalp to the level of the eyebrows and on arms, thighs and back. It was a most disgusting deformity. The patient made a recovery without incident. Undeterred by this disagreeable experience, she came back May 24, 1917, normally pregnant again at full term and I again delivered her by Cæsarean section, this time of a girl baby weighing eight pounds, two ounces, and perfect in every particular. Her recovery was normal in every way.

Case IX: Only yesterday a new combination presented itself to me, and after studying all the factors in the case I had no hesitancy in advising and performing Cæsarean section. This case was a most interesting one. The woman was seven months pregnant, and the foetus had been dead about ten days. Under ordinary conditions these cases are mechanically the most difficult one can undertake. The uterus is soft and flabby, yet the internal os is usually rigid. The difficulty of

dilating it sufficiently to extract the head of a seven months' child, which is more or less macerated, is extreme. I have never seen such a case where the uterus was not considerably lacerated. The hæmorrhage is severe and difficult to control and the whole operation is a tedious one and extremely prostrating for the mother. In this particular case the cervix had been lacerated and repaired, and there was a great mass of cicatricial tissue present, and the internal os was rigid and unyielding. The abdomen showed the cicatrix of a previous operation, although the patient denied it. I unreservedly advised a Cæsarean operation in this case and performed it yesterday. Upon opening the abdomen in the midline below the umbilicus, the uterus was soft, flabby and without tone. It had been suspended at some former time, but in a way that I could not understand. Several dense bands fixed anteriorly to the wall of the uterus mid-way from the cervix to the fundus anchored the uterus to the abdominal wall. Laterally from this point of fixation were two broad bands of adhesions extending out to the Fallopian tubes; the omentum was also more or less adherent in an indescribable way. I opened the uterus in the midline and with very much less hæmorrhage than is usual when the uterine muscles are incised. There was no difficulty in delivering the fœtus; when, however, the placenta was delivered the hæmorrhage was extreme, and for a long time there was no attempt on the part of the uterus to contract. Insertion of a couple of deep sutures seemed to stimulate it, and before the wound in the uterus was closed it had contracted with sufficient firmness to control the hæmorrhage, and what followed was without incident. I particularly call attention to cases of this character because in competent hands I believe this method is the ideal one. Even with the complications detailed in the previous case, there is little mutilation to the mother, and the whole operation is over in twenty minutes; at least, it should be.

Case X: Another exceptionally interesting case was a Mrs. A. H., age 38, who had had amputation of the cervix uteri several years ago. This left a cervix so mutilated by cicatricial tissue that Cæsarean section had been done at full term thirteen months before I saw her. At that time both tubes were ligated so that no subsequent pregnancy might occur. Yet, thirteen months later, I performed Cæsarean section at full term and successfully delivered her of a fine baby. Of peculiar interest in this case is that amputation of the cervix was done in such a way as to render subsequent pregnancy unsafe, and the futility of ligation of the tubes as a preventative of pregnancy. The only sure way to prevent pregnancy in such

a case is either to remove both ovaries or else the uterus itself. Experience has shown that if even the tubes are removed it does not surely prevent impregnation.

These varied cases have been briefly cited to indicate the character of the cases that have come under my own hand. I thoroughly believe the time has passed for high forceps operation under any circumstances other than very exceptional ones. I have never seen a high forceps delivery which did not injure the mother in some way, and we all know that many babies are lost by resorting to this method. Very few men ever have opportunity to acquire sufficient experience with it, and the delivery of a child is more a matter of brute force than science. Therefore, I would invariably substitute Cæsarean section for a high forceps manipulation. This means that in all cases where high forceps have been indicated in the past would, except in very exceptional circumstances, be relegated to the class requiring Cæsarean section.

All cases of placenta prævia I would consider suitable for Cæsarean section, and I have done one such case with this as an indication.

A question that has often been put to me is: What danger is there if you open a uterus over the site of the placenta? Well, I have done this several times, and in fact I am always glad when I find a placenta beneath the incision, because in that case there is no danger of making an incision into the underlying foetus, as was done in one case of which I know. If I happen to incise over the site of the placenta, I immediately separate it and deliver it at once and thus get it out of the way, instead of going through it, as has been advocated. In cases of this kind it is necessary to proceed with the utmost rapidity to avoid embarrassment, as illustrated by one of my cases where the rapid and firm contraction of the uterus caused considerable difficulty in delivering the child's head, the uterus having grasped it firmly about the neck. An opening over the placental site is no cause for embarrassment whatever, if one will stop and think for a moment and act accordingly.

One of the chief precautions to obtain a successful result is avoidance of sepsis: this means no vaginal examinations except the one necessary to determine pelvic conditions and whether or not the uterine os is sufficiently dilated for drainage. If one can wait until full term and the actual beginning of labor pains, the os will be dilated and the conditions ideal for the uterus to care for itself after delivery.

The advantages of the operation, when properly done, are so plain and so many that discussion would seem unnecessary. In all the cases I have done thus far I have never lost a

mother and have not lost a child as a result of anything connected with the operation itself; and in no single case has a result of the operation developed a single counter-indication to what was done at the time of operation.

Several cases have been reported, one to me personally, of rupture of the uterus in a pregnancy following Cæsarean section. From my observations of the methods employed in suturing the uterus, I believe this accident due to faulty technic. After the child is extracted and the uterus has contracted, the walls of the incision are perfectly defined. The sewing up of the uterus should be done with the greatest care and precision, and a deep suture should be carried from just below the peritoneum down through the *whole* substance of the uterus through the endometrium and brought out in a corresponding manner on the other side. When such a suture is tied it approximates the two sides of the incision through their entire depth. These deep sutures are the reliable ones for closing the wound in the uterus and should be sufficiently close to hold the opposite sides of the incision in firm juxtaposition and to coaptate the cut margins of the endometrium. I am strongly in favor of the interrupted suture in preference to the continuous one, for the reason that with the contraction and involution of the uterus I believe a continuous suture may become sufficiently relaxed to allow of insecure union, and that because of this a subsequent rupture might occur. The superficial suture of No. 2 Catgut should be continuous because it serves merely for the approximation of the margins of the perineum and for burying the deep sutures.

One of my cases is particularly noteworthy in this connection, for the reason that Cæsarean section was first done April 12, 1912, since which time the operation has been performed twice upon the same patient, with complete success and without finding complications left over from the previous operations. I did the first operation and one of my associates the other two.

There follows a summary of the cases upon which the foregoing suggestions and conclusions are based. An interesting detail not shown in this summary is that there were six of the cases upon whom the operation was performed twice, and two of them upon whom it was performed three times.

118 Forest Hills Street.

SUMMARY OF CASES

Diagnosis	Operation	No. of Cases	No. of Operat.	Cured	Died
Albuminuria	Cæsarian section	1	1	1	
Breech presentation	Cæsarian section	3	3	3	
Cicatricial contraction of cervix uteri	" "	1	1	1	
Contracted pelvis	" "	22	22	22	
Dystocia;	" "	28	28	28	
Dystocia; appendicitis	Cæsarian; appendicectomy	1	1	1	
Dystocia; hydramnios	Cæsarian section	1	1	1	
Eclampsia	" "	6	6	6	
Epilepsy	" "	1	1	1	
Fœtus dead 7½ months	" "	1	1	1	
Metrorrhagia gravidarum; ap- pendicitis	Cæsarian section and appendicectomy	1	1	1	
Hernia, vent. p.o.	Cæsarian section	1	1	1	
Mitral insufficiency; exhaustion	" "	1	1	1	
Myomata uteri	Cæsarian; myomectomy	1	1	1	
Myomata uteri	Cæsarian section; hyster- ectomy	1	1	1	
Occipito-posterior position	Cæsarian section	2	2	2	
Placenta prævia	" "	4	4	3	1
Post-operative adhesions	" "	1	1		1
Spondylitis	" "	1	1	1	
Toxæmia	" "	2	2	2	
Transverse presentation	" "	2	2	2	
Uterine inertia	" "	7	7	7	
		89	89	87	2

Total number of cases, 89; total number of deaths, 2; death rate, $2\frac{1}{4}$ per cent.

TREATMENT OF EVERY-DAY RECTAL TROUBLES *

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It was always a temptation to pass rectal cases along to someone else, and to slight unpleasant and unsavory work, which perhaps partly explains the long list of sufferers from rectal troubles. As a matter of fact, surgical operations upon the anal canal are in most institutions left to the resident staff, to whom the clamp and cautery is the court of first and last resort; and the patients return for repeated operations for the same disease, its complications or its sequelæ. It is not unusual to see a patient who has been repeatedly operated upon for fistula still uncured, or one who has had various operations for hæmorrhoids with a strictured or incontinent rectum and the hæmorrhoids still in evidence.

Post-operative care is of utmost importance, and the unpleasant condition of the ano-rectal region after operation should not lead us to neglect it.

The diagnosis of rectal diseases is not particularly difficult, and probably 95 per cent. of all rectal troubles are within the reach of the examining finger. Of course, it goes without saying that a good history should always precede any examination. For examination, two positions are used most commonly, the dorsal or the right or left latero-prone. At the Boston Dispensary the right latero-prone posture is used, and the left index finger for examining. For the sigmoid examinations, the knee-chest position is best. It pulls the rectum up, throws the abdominal contents forward, and straightens the recto-sigmoidal kink.

With the patient on his right side, the right leg extended and the left leg flexed, the first step is an inspection of the ano-rectal region. Separate the buttocks and have the patient strain down a little. Presence or absence of bleeding, mucous or purulent discharges, protrusions, discolorations, external, sentinel or thrombotic piles, relaxed sphincters with prolapse of the mucous membrane, prolapsed, bleeding, ulcerated or gangrenous piles, and epitheliomatous indurations can be noted at a glance.

It is most important to know if the patient's bowels are regular, constipated or watery; if there is blood, mucus or pus in the movements; if there is pain before, during or after the movement; if there has been gain or loss of weight.

To most patients all rectal ailments are "piles," and too often this is true also of physicians. Recently, a patient came

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to the out-patient clinic, who had been treated six months for "bleeding piles." The real trouble was inoperable carcinoma of the rectum. Many patients who have rectal trouble daub on some "pile cure," and grin and bear it until the trouble gets beyond endurance.

Briefly, patients report for rectal treatment chiefly because of pain, bleeding, protrusions from the anal canal, pus or mucous discharges, or itching.

Pain suggests fissure, hæmorrhoids, suppuration in the form of peri-anal or peri-rectal abscess, ischio-rectal abscess, prolapse of the rectum, external thrombotic hæmorrhoids, foreign bodies as fish bones or bone fragments from food, malignancy, and injuries.

Bleeding has such a variety of causes that I will mention only a few: hæmorrhoids, polypi, tumors, malignancy, injury, stricture, ulceration, syphilis, abscess, foreign bodies, and various other conditions remote from the rectum, as intussusception, appendicitis, mineral poisoning, conditions secondary to surgical operations, anæmia, etc.

Protrusions may be hæmorrhoids, polypi, cysts, or pedunculated growths.

Itching may be due to pediculi, proctitis, irritating discharges, or personal uncleanness.

It is always well to investigate a chronic diarrhœa, with loss of weight, as malignancy must always be suspected in these cases, age being of no account in excluding it.

After inspection of the ano-rectal region, the well lubricated finger is pressed against the external sphincter until the resistance is overcome and then very gently introduced into the anal canal. It is easy to distinguish between the relaxed sphincter with prolapsed mucous membrane or hæmorrhoids and the hypersensitive and hypertrophied muscle with fissure. The space between the internal and external sphincters is noted and the finger is swept over the cavity of the rectum. It is always well to palpate the tissues about the anal margin between the examining finger and thumb, as induration of blind fistulæ can then be easily made out. By making a little traction to one side, and having the patient strain down, the presence or absence of piles is easily demonstrated.

After palpation, it is well to examine with the proctoscope, of which the Brinkerhoff speculum is perhaps the best type. This is warmed and well lubricated, very gently introduced, and the interior of the rectum well viewed with the slide withdrawn.

Granting that the diagnosis of hæmorrhoids is made (and about 35 per cent. of the rectal cases now coming to the out-

patient department are hæmorrhoidal), what are we to do? The first questions are always: is it an operative case and, if so, must the patient take ether, and how long must he be laid up?

First, it is necessary to determine the condition of the patient, as it is manifest that it is useless to operate for hæmorrhoids in the presence of organic heart disease, cirrhosis of the liver, cancer, stricture, or intussusception. In the early stage it is often sufficient to regulate the patient's diet, put a ban on violent exercise, prescribe an ointment of tannic acid, stramonium and belladonna, inject a little cold water before the bowels move, and warn against straining at stool. It is not well to try to reduce sentinel piles, skin tabs or external thrombotic hæmorrhoids, which are not meant to be reduced. Prolapsed and bleeding externo-internal hæmorrhoids ought to be removed.

For the removal of hæmorrhoids a variety of operations are used, the most common of which are the clamp and cautery, clamp and suture, ligature, excision, or the use of some injection which forms a clot in the hæmorrhoids. The Whitehead operation is now not often done. I believe that most cases can be operated comfortably and safely under local anæsthesia except some of the complicated fistula cases; but it is well to allow the patient some voice in the matter, and, if he insists upon a general anæsthetic, to let him have it. For local anæsthesia, a 0.5 per cent. solution of novocain in normal saline solution, with five drops of adrenalin solution to the ounce, can be used with good results; and the entire operative area may be blocked off with four punctures, none of which are painful. After the anæsthesia is complete, any preferred method of operating may be followed. Personally, I prefer the ligature operation as done by Dr. T. C. Hill of this city, pulling down the hæmorrhoid, cutting around it and tying tightly with No. 25 linen thread, then cutting away the tissues and leaving a sufficient stump to avoid slipping of the ligature. The clamp and suture operation is done exactly like the clamp and cautery operation except that the tissues are united with a continuous suture of No. 1 chromicized catgut, putting the first stitch behind the clamp and leaving the end long, so that the suture may be pulled tight after removal of the clamp.

I do not like the clamp and cautery as a routine operation. There is always a temptation to take off too much tissue and, in the effort to remove all the skin tabs, to produce a stricture. The use of the cautery sears the nerve endings in the peri-anal skin and leaves painful scars and sometimes stricture.

External thrombotic hæmorrhoids are best treated by in-

cision, turning out the clot, removing an elliptical area of tissue, and packing the wound.

If the patient does not wish an operation, bleeding hæmorrhoids may be treated by injection of a single pile at a time with carbolic acid in 5 to 10 per cent. solution, or with a 5 per cent. solution of quinine and urea hydrochlorid. This method should be applied with care, cure is not sure, but relief almost always follows.

I believe that a very important part of the after-treatment of all rectal operations is the insertion of a finger into the rectum every other day. This keeps the sphincters from spasm, smoothes out the cut edges, and keeps them from healing in wrong directions.

Fissures may be treated non-surgically by applying a 10 per cent. solution of cocain and cauterizing the raw surface with 12 per cent. nitrate of silver or 95 per cent. carbolic acid; and surgically by divulsion of the sphincter under general anæsthesia, or, much better, by excision and division of the external sphincter under local anæsthesia. This puts the muscle at rest and removes the cause of most fissures.

Fistulæ may be avoided by early incision of any purulent focus in the peri-anal region. Unfortunately, most of the damage is done when the patient first appears; the pus, following the line of least resistance, has burrowed into the anal canal. The internal opening may almost always be found in the median line, either anteriorly or posteriorly, and the various ramifications may be followed out and the whole tract laid open. An important principle in the treatment of fistulæ is to follow out all these sinuses, connect them outside and then make one cut through the sphincter. The operation is easy, as a rule, the injection of a methylene blue solution making the sinuses plain, but the after treatment is tedious and painful. One well-known rectal surgeon says that it is impossible to heal a fistula properly and keep the patient your friend. The granulating area must be attended with utmost care and healed absolutely from the bottom or the operation will be a failure. Dr. Hill suggests frequent sitz-baths for convalescent fistula patients, and this is a good suggestion.

Pruritus ani is a trouble which drives patients nearly wild. The picture is quite characteristic and consists of a water-logged, moist and cracked peri-anal skin, with deep fissures and exoriations due to scratching. I have the best results from cleaning this area with gauze saturated with alcohol, which is somewhat painful, painting the affected area with a 12 per cent. saturated solution of nitrate of silver, and dusting over with calomel. Hill uses one drachm tincture of iodine in an ounce of

compound spirits of ether. It is, of course, necessary to make a thorough examination to determine the cause of the pruritus and correct it, whether it be proctitis, pediculi, hæmorrhoids, cryptitis, eczema, infection, or pin-worms. Sometimes a few exposures to X-rays will cure an obstinate case. Soothing ointments containing carbolic acid or one of the mercuries are useful.

In all work about the rectal region it is wise to observe the greatest care and to be exceedingly gentle. Be particularly careful in stretching the sphincter, as being over-zealous in this respect may rupture the fibres of the muscles, with subsequent incontinence; or if you have an unsuspected stricture you may rupture into the peritoneal cavity and cause your patient's death.

The successful treatment of rectal troubles does not require any complicated or expensive armamentarium, but it does require patience, tact, and perseverance.

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THE PHYSICIAN'S DUTY IN THE ANTI-TUBERCULOSIS CAMPAIGN

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In the past the general practitioner as a rule has not realized his responsibilities in the anti-tuberculosis campaign. For instance, he has not been on the watch for cases of tuberculosis in his practice or rather has not considered every case of sickness as possibly of tuberculous origin. Furthermore, if he has made a diagnosis of tuberculous disease and instituted the usual treatment of rest, fresh air, and good nourishing food, he has too often stopped there, without thinking of the health of those who come in contact with the tuberculous patient. He allows the disease to develop in these contacts so that when they show signs of tuberculous infection they are already pretty well advanced in the disease.

The general practitioner must play a large part in eradicating tuberculosis or in decreasing the morbidity and mortality

caused by it. He can do this by instructing his tuberculous patients to cover their mouths when they cough and sneeze, and to burn the material used for this purpose; to expectorate into sputum cups that are kept covered, so that flies cannot get into them and serve as carriers of the bacilli; and to sterilize dishes and eating utensils by boiling.

In addition, he should seek out those persons who have been in contact with his tuberculous cases and persuade them to be examined not once but every few months, even though they feel well, and more often if they have any subjective symptoms.

It is generally conceded that many of the cases that are found by the general practitioner have been expectorating tuberculosis bacilli for many years and that they have infected many people during that time. I am in the habit of insisting upon examination of the families of tuberculous patients and of those friends and acquaintances with whom they have closely associated. In almost every case the patients and their relatives are only too glad to coöperate, and invariably one or more of the contacts are found to be infected.

It is when the disease in these contacts is in the inflammatory stage and there has not yet been any ulceration, that we can effect a cure; but in the cases that are diagnosed after they show ulceration, the best that we can hope for is quiescence or arrest of the disease; although with certain changes in the mode of living even these open cases can be assured a long natural life. Unfortunately, a large majority of them do not have the necessary will power and determination to make these changes, and consequently we see many relapses in this type.

While reviewing a large number of statistics, I paid special attention to the length of time that had elapsed between the period of contact with a tuberculous person and the first outward sign of the disease in the exposed individual. In many instances this interval is not less than fifteen years and sometimes as much as twenty years. Of course, there are many other possible sources of infection, but these are really much less potent than advanced cases with whom the patients have associated for a longer or shorter length of time.

It has been pretty definitely proved that tuberculosis is a disease of childhood and primarily a disease of the lymphatic nodules. However, it has also been shown that tuberculosis does not produce absolute immunity and that tubercle bacilli vary in virulence. It is, therefore, inevitable that tuberculosis occurs also in adult life. Unfortunately, the incubation period of tuberculosis is so indefinite that we do not consider tuberculosis as infectious or contagious as some of the acute diseases,

and, consequently, on account of its insidious onset and the very slight initial symptoms, we have not in the past given the attention to this important part of the work that we should have given.

The general practitioner as a rule cannot dissociate tuberculosis from the classical symptoms that have been handed down from the time when the disease was diagnosed by its symptoms alone: the consumed body, the hectic flush, drenching night sweats, the incessant cough, and the coughing up of quantities of pus. In order that an early diagnosis be made in contacts, it is necessary for physicians to be familiar with the symptoms of incipient tuberculous disease. At this stage patients may be cured without being compelled to enter a sanatorium.

Statistics show that persistent tired feeling and evening elevation of temperature are the most frequent of the early signs of active tuberculosis. Too many physicians are in the habit of considering a slight fever as unimportant and of explaining it away by saying the patient is nervous, etc. They do not realize the value of the thermometer in the diagnosis of tuberculosis.

Among the other early symptoms are nervousness, lack of control of temper, persistent indigestion, slight cough or irritation in the throat, slight hoarseness, and loss of weight, appetite and strength. Pain in the chest may be present but is not necessarily of the sharp knife character that physicians usually associate with pleurisy, but may be any kind of abnormal feeling in the chest.

It is very unfortunate that physicians ordinarily feel that they must get a bacteriologically positive sputum or on auscultation find moisture in the chest before diagnosing tuberculosis. They do not appreciate, as specialists do, the value of skin tests, X-ray examinations, etc., as diagnostic aids in early cases. In a few cases it may be impossible, even with the help of these technical examinations, to say definitely that the trouble is or is not due to the tubercle bacillus. It is far better for the general practitioner to consult in these questionable cases with a specialist than to say that the suspected patient is not tuberculous because the stethoscope and microscope say so.

We are not getting the results that we should in our sanatoria because we wait for the patient to become advanced before we begin to treat him. The general practitioner may feel very enthusiastic about the improvement brought about in his advanced cases in sanatoria and well he may, because they are fat and look well when they return to their homes, but experience has shown that they too often have a relapse. If we

are ever to advance very far we must treat the disease in its inflammatory stage, and this we can do in many instances by examining contacts for signs of tuberculous activity.

CLINICAL DEPARTMENT

A CASE OF PURULENT PYELO-NEPHRITIS SHOWING POSITIVE WASSERMANN REACTION AND RECOVERING UNDER ANTI-LUETIC TREATMENT

Reported by ROLAND O. PARRIS, M. D., Brookline, Mass.

Mr. G. A. P., aged 50, was first seen Sept. 23, 1916, at 3.30 A.M., suffering from colic, nausea and diarrhœa. Twelve hours previously, while on an automobile trip, he had eaten heartily of pears and cheese, and an hour later he noticed some discomfort and was nauseated. Upon arriving home he vomited what he had eaten, undigested. His abdominal discomfort continued, and after colicky pains had lasted for some time he had several loose movements.

When first seen he was somewhat pale and perspiring slightly; the temperature was 99 degrees F, the pulse rate 90, and the respiration rate 24. He had not vomited for an hour, and the amount at that time had been small and undigested. The pain was at times continuous and at times became rhythmical, with periods of abatement.

Physical examination: The patient is a well developed man of 50, with a somewhat pasty color. The tongue is slightly coated and moist. Heart and lungs are negative. The abdomen is tympanitic and generally tender, with muscular spasm in the epigastric region. The spot most sensitive to pressure is just below the umbilicus. There is no pain in the urinary tract nor is there increased micturition.

The *family history* finds diabetes on the paternal side; the mother is well at 72, except for beginning cataracts; two brothers are living and well.

The patient's *past history* is as follows: He had mumps and measles when a child. He has had three attacks of "biliousness" within the last two years, diagnosed by attending physicians as indigestion twice, and as jaundice the last time, which was three months ago. Otherwise he has been well except for a chronic dry cough that has never been benefited by any treatment. He has had several automobile accidents, fracturing his left arm in the last one. He denies venereal disease and has one child by his first wife.

The treatment given at this time was a tablespoonful of castor oil, an enema, and two drops tincture colocynth every ten minutes. At the end of an hour, the pain still being severe, he was given morphin and atropin, and a tentative diagnosis of appendicitis was made.

The patient was seen about five hours later, and the abdominal condition was found to be the same; the pain was now continuous though less severe. The temperature at this time was 100 degrees F. and the pulse rate 108. A blood count showed 90 per cent. neutrophils, and a positive diagnosis of appendicitis was made.

The case was removed to the hospital, where a badly diseased appendix was removed, its location corresponding to the point of greatest tenderness in the middle line. There was a small quantity of fluid about the appendix which at the time of operation was considered to be pus, but later no opening could be found in the diseased part of the appendix. Further exploration of the kidney, liver, or gall-bladder was not made. The wound was drained.

Following the operation the patient had to be catheterized for six days. The drain was removed, and the wound at the end of the tenth day was closed except for about a quarter of an inch. At this time the patient began to cough, being temporarily relieved by lying down; the same night the temperature rose to 101 degrees F., the pulse rate to 100 and respiration rate to 30. Urinary examination at this time showed the following: Total quantity 750 cc., high color, specific gravity 1.010, no sugar or acetone, slight trace of albumin, sediment slight and showing nothing abnormal.

The elevated temperature continued, and the cough became very frequent and irritating. Chest examination at this time was negative except that the inspiratory sound was somewhat louder on the left side, at the base, posteriorly. The patient complained of nothing except the cough and extreme weakness.

Blood examination at this time was as follows: Hæmoglobin 75 per cent; leukocytes 12,000; red cells 3,200,000; malarial organisms not found.

Abdominal examination: The wound is nearly closed, and there is no tenderness. The temperature ranged between 100.5 degrees and 103.8 degrees F., the pulse rate between 100 and 120, and respiration rate between 25 and 36.

A consultant was called and he suggested that the condition might be due to low solid excretion and the cough to nervousness. The patient was given digipuratum, $\frac{1}{2}$ grain every four hours.

The solid output in the urine increased within a few days, and the temperature gradually came down and reached normal ten days after the initial rise. On October 13 the patient was returned to his home.

Twenty-four hours later the temperature again rose to 100.6 degrees F., the pulse rate to 80, and respiration rate to 30, and the cough returned. The same treatment that had benefited the patient while at the hospital was given, but the temperature rose steadily and in a few hours reached 104.2 degrees F., the pulse rate rose to 120, and respiration rate to 44. The patient complained only of being hot. The abdomen was negative; inspiratory sounds had become still louder on the left side. There had been no chills. Catheterization again became necessary. (Since previous catheterization had been discontinued he had never been able to urinate while lying down.) Pupillary reflexes were normal, knee jerks and ankle clonus absent, and plantar reflexes normal.

Uranalysis on October 14, the day of the second rise of temperature, was as follows: Total quantity 1200 cc.; color slightly high; specific gravity 1.011; sugar and acetone absent; chlorids normal; total solids 30 gm.; urea 20 gm.; sediment slight, containing bacteria, a moderate number of leukocytes, and a few squamous cells. On October 15 he had several watery movements, the temperature ranged between 101 degrees and 103.6 degrees F., the pulse rate was 100, and respiration rate between 35 and 37. All other findings were practically the same. The chest and abdomen were negative.

On October 17 the temperature was 104 degrees F. at 6 P.M., the pulse rate 116, and respiration rate 40. During the night he complained of some pain in the lower part of the abdomen and was slightly tender, but in the morning both pain and tenderness had disappeared. Hiccough had been present for several days to a moderate degree, and became very obstinate on October 16 and 17, resisting all treatment.

Blood examination was as follows: Hæmoglobin 75 per cent; red cells 4,750,000; leukocytes 23,000. During the afternoon he was catheterized, 720 cc. urine were withdrawn, followed by a large amount of pus.

The case now being clearly one of pyelitis or abscess of the kidney, he was put on ten grains hexamethylenamin every four hours. Signs of weakening heart became apparent. During the next few days he was seen by two consultants, both of whom gave a hopeless prognosis. Tincture of echinacea was advised and given. A blood examination at this time showed a strongly positive Wassermann reaction, and one a few days later gave the same result.

Tincture of echinacea was discontinued and supplanted by 18 drops potassium iodid and $\frac{1}{4}$ grain proto-iodid of mercury thrice daily.

The antisyphilitic treatment was begun on October 23; five days later the temperature had reached 99 degrees F., the pulse rate 98, and respiration rate 30, and the patient seemed clearer mentally, having been more or less delirious previously. There followed several rises of temperature, each accompanied by urethral discharge of pus, but the case gradually recovered.

The points of special interest in the course of this case are:

First, absence of all usual symptoms, except fever, of pyogenic kidney infection in the adult;

Second, improvement following administration of mercury and potassium iodid in a case of purulent pyelo-nephritis;

Third, the question whether this is a case of renal syphilis complicated by secondary infection with pyogenic organisms, or whether syphilis had no relation to the kidney disturbance;

Fourth, the source of the purulent infection, whether hæmatogenous (following appendicitis) or ascending (following repeated catheterizations).

EDITORIAL

BOOKS for review, exchanges and contributions — the latter to be contributed to the *GAZETTE* only and preferably to be typewritten — subscriptions and all communications relating to advertising and other business should be sent to THE NEW ENGLAND MEDICAL GAZETTE, 80 East Concord Street, Boston. Make checks payable to THE NEW ENGLAND MEDICAL GAZETTE.

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MEDICAL AUTHORSHIP

In last year's December issue of the *GAZETTE* this subject was given editorial consideration for the purpose of pointing out certain technical faults, such as meaningless titles, obscure abbreviations, and careless preparation of manuscripts. At this time we wish to call attention to the dearth of important papers from the pens of general practitioners. Most of the better papers published today deal with original research conducted by special workers in special laboratories, or with observations made by surgeons and other specialists. This may be as it should be, but it seems to us that the general practitioner is neglecting his opportunities and his duty if he fails to contribute to the advancement of medical science, particularly of applied medical science.

It may be argued that the number of cases of any one disease seen by a family physician is too small to furnish adequate material for research; to which we answer that the report of one case, properly studied in all its details and aspects, is often of greater value than statistics based upon a series of less thoroughly studied cases. It may also be objected that general practitioners see but few unusual and interesting cases worth reporting, and that nearly all of their work is with the commoner diseases; but it is just these common ailments that should be studied most, because a better knowledge of them will be of greater benefit, since larger numbers are affected by them. Indeed, we are of the opinion that the fad of adding another rare case to a meager series of previously reported ones is often allowed to take precedence over the more important and certainly more profitable study of those diseases that are

encountered every day. It is pneumonia and phthisis; typhoid fever, scarlet fever, and diphtheria; cardio-vascular disease, nephritis, and cancer, that figure most prominently in the mortality and morbidity statistics of humanity. A reduction of but 1 per cent. in this mortality would save hundreds of lives every year and would be of vastly greater benefit than the total eradication of some rare condition.

During the conduct of a case of any one of these conditions many unsolved problems undoubtedly present themselves to the attending physician. He should select one of these problems, draw up a plan of attacking it, and then follow this plan in his attempt to solve it. His resources and inclination and the nature of the problems should guide him in this selection, and he should confine himself to those that give promise of success.

As an example of what may be accomplished by a general practitioner let us call attention to the work done by Sir James McKenzie in the study of the heart and its diseases. This work is of first importance and was done by McKenzie while he was engaged in a very busy general practice in a comparatively small town of Northern England, relatively far away from large medical centers and their supposedly necessary facilities. McKenzie's wonderful achievement should serve as a stimulus for every physician.

The motive for engaging in research work need by no means be purely altruistic. Indeed, the general practitioner may well expect considerable material benefit therefrom. Say that he is studying some phase of the cardio-vasculo-renal problem; the additional knowledge he gains through this study will in itself be ample reward for his labor, because he will be much better fitted to treat successfully cases of this kind, which in turn will result in added financial revenue as well as greater respect in his community.

NEW YORK HOMŒOPATHIC MEDICAL COLLEGE AND FLOWER HOSPITAL'S SHOWING IN THE NEW YORK JANUARY EXAMINATION

Thirteen graduates of New York Homœopathic Medical College and Flower Hospital were among the 103 candidates examined at the New York examination in January, 1918. Five of them passed and eight failed. Such a disgraceful performance indicates pretty definitely that the instruction offered at this school is qualitatively inadequate. It would seem that those responsible for the school's policy would not be content until they had placed their college in *Class A*, and until con-

ditions that make possible results like those stated above had been rectified. "By their fruits ye shall know them" may well be applied to medical schools. Surely, no self-respecting prospective medical student would knowingly choose to study at a second-class school, more than 50 per cent. of whose graduates failed in a state examination. Brace up, New York! This is an age of progress and efficiency. "Service" is the watchword. Slackers and shirkers are despised, and mediocrity due to lack of conscientious effort is a disgrace, as well in medical education as in other endeavors.

POSOLOGY FROM A HOMŒOPATHIC STANDPOINT

"From the very beginning of the Homœopathic School, the question of dosage has been the battleground of discussion, where theory and speculation, and passion and ridicule, all pointing to results at the bedside, have done their utmost to befog the seeker after precise facts for his guidance. My own plea is for the subphysiological dose on the ground of its rationality and logical necessity in practising homœopathy. How far removed from the physiological dosage such homœopathic subphysiological dose must be, in any one case, cannot be determined *a priori*—it must depend largely on the patient's susceptibility and the class of medicine employed. Judging from the experience of the school, it occupies a rather wide range of possible attenuation of the crude drug, and therefore wide removal from the known physiologic dosage.

In the very nature of things, the required dosage of a medicine given homœopathically must be a different thing from the dosage when the same drug is given antipathically. While both uses of a drug are legitimate, the latter has nothing to do with homœopathy and is as a rule a well-ascertained definite quantity. In giving a drug according to its homœopathicity to a diseased condition, we know that a smaller, subphysiological dose is required if we want to avoid dangerous aggravation. Let us inquire into the reason of this experience.

Remember that every living organism is in the constant endeavor to keep itself intact, automatically and unconsciously to the individual: it possesses a power that tends to health. In other words, the living organism has a protecting sphere by means of which it endeavors to keep itself whole, which offers resistance to any foreign intruder, be it a drug or disease influence. This resistance of the body to anything that tends to disturb its health—its wholeness—must be overcome first of all before the drug or disease germ can manifest its peculiar and destructive power. If it is a drug, it has a certain amount

of body resistance to overcome in establishing its physiological action in certain organs or tissues. Now, since the old school does not employ drugs according to similars, but according to opposites or different action, it must on that very account use large doses, large enough (1) to overcome the normal body resistance, and (2) sufficient to produce symptoms—its distinctive effects. Now, why is a smaller dose required if the same drug is administered according to the homœopathic law? Because here *no bodily resistance has to be overcome*, and a similar action already exists in certain organs and tissues. The disease has overcome the resistance of the protective sphere of the body and established its insurrectionary government, and the affected region is readily exposed to attacks from without. We offer as a remedy a drug we know from the provings to act similarly upon the very tracts involved. Hence, a much smaller dose is required, for the protecting gates are down. Other reasons for the smaller dose of homœopathy may be found in the exalted sensitiveness, caused by the disease process, and by the fact that our remedy, given singly and uncombined, is not interfered with by other agents. It seems plain, therefore, that comparative smallness of dosage is the one logical and obvious corollary of the application of the homœopathic law, and we all agree that the homœopathic dose of a remedy must be subphysiological.

Here we are on solid ground, but “subphysiological,” looked at from the point of view of the clinical experience of the school, is found to be a wonderfully elastic term. It may include comparatively large doses as well as, judging from the reports of the extreme high potency wing of the school, the highest attenuations; for even these latter are credited with producing symptoms. Still, it seems to me that, granting this to be a fact, it is rather the exception and not the rule, and presupposes extraordinary susceptibility or other favoring conditions.

I think the tendency in the school at present is to be content with the Hahnemannian potencies, 1 to 30. From a pretty wide acquaintance with practitioners throughout this country and Europe, I do believe that in this latter day homœopathy of ours, barring the small minority of extremists, the large majority are indeed practically a unit in their every-day practice in acute diseases by using the lower attenuations, those but little removed from immediate chemical and physical analysis, leaving the higher potencies to the extraordinary, exceptional cases that present themselves, where we can satisfy our innate love of the marvelous and the occult.

I cannot resist the temptation of quoting Hahnemann's

letter to Dr. Schretter in 1829, showing that he looked with distrust on any effort to continue potentization beyond the 30th.

"I do not approve of your dynamizing medicines higher, as for instance, up to the 30 or 60. There must be some end to the thing. It cannot go on to infinity. By laying it down as a rule that all homœopathic remedies be diluted and dynamized up to the 30th, we have a uniform mode of procedure in the treatment of all homœopathists, and when they describe a cure, we can repeat it, as they and we operate with the same tools." — *W. B. in the Pacific Coast Journal of Homœopathy.*

THE GAZETTE WILL CONDUCT A DEPARTMENT OF CORRESPONDENCE

A few pages of the GAZETTE are in the future to be set aside for publication of suitable letters received from subscribers and others, letters that pertain to medical matters and are of sufficient general interest to warrant such publication. We believe that this should add to the value and interest of our journal, and we invite our subscribers to become regular correspondents. Bits of information, practical hints, therapeutic suggestions, instructive case reports, or other matter of interest that may not warrant publication in more extensive articles, are frequently left unrecorded because of their apparent unimportance. Very often, however, such information is very helpful to others and should not be withheld.

Also, we shall welcome proper controversial comment upon previously published letters, editorials, or original articles. If these contain statements that you consider erroneous, do not fail to say so. As a medium of exchange of opinions this proposed correspondence department should add much zest to the journal.

Furthermore, the editorial staff will attempt to furnish information regarding medical subjects, and invites inquiries from GAZETTE readers, to be printed, with the answers thereto, in this department. By this we do not mean to imply that medical editors are possessed of oracular omniscience; but we believe that sources of information are very often more accessible to us than to many physicians and particularly to general practitioners, and we are willing and anxious to give of our time if thereby we can help our readers in the solution of difficult problems and can thus add another feature of usefulness and service to our journal.

The success of this department, above all others, will depend almost wholly upon the interest taken in it by our readers. We solicit your inquiries, your interesting experiences and case reports, and your criticisms.

REVIEWS

HOMŒOPATHIC PERIODIC LITERATURE

The Hahnemannian Monthly. May, 1918

1. *The seal of "The North American Academy of the Homœopathic Healing Art," located at Allentown, Pa., the first homœopathic medical college in the world.* 257. Guernsey, J. C.

This seal of the then so-called "Allentown Academy," whose official name, translated in the title of this article, was *Die nordamerikanische Akademie der homœopatischen Heilkunst*, has been presented by Dr. Guernsey to Hahnemann Medical College of Philadelphia, together with numerous papers, diplomas, certificates, etc.

On December 30, 1833, Drs. William Wesselhoeft, Henry Detwiller, and John Romig met in Philadelphia at the house of Dr. Constantine Hering to confer upon the possibility of establishing a homœopathic school of medicine. As a result of the meeting the academy was founded April 10, 1835, Hahnemann's birthday anniversary, with Constantine Hering as its president. The teaching faculty comprised Drs. C. Hering, Wm. Wesselhoeft, H. Detwiller, E. Freytag, J. Romig, and J. H. Pulte. The curriculum included "Clinical instruction, examination of the sick and semeiotics; pharmaco-dynamics and materia medica; pharmaceutics and medical botany; dietetics; special therapeutics, surgery and obstetrics; medical jurisprudence; general therapeutics; symptomatology and human pathology; physiology and anatomy; comparative anatomy and comparative physiology; zoölogy, phytology and mineralogy; chemistry, physics, geology, astronomy, and mathematics; history of medicine and of natural sciences; and the Greek, Latin, and German languages as preparatory studies."

A great amount of homœopathic literature was published under the academy's auspices, and *Hahnemann's Organon and Jahr's Manual* were translated into English. A weekly periodical, the *Correspondenzblatt der nordamerikanischen Akademie der homœopatischen Heilkunst*, and also *Archiv Zettel*, were published, as well as an elaborate monograph on snake poison.

The Academy was kept alive but few years, chiefly because of failure of the bank in which its funds were placed.

2. *The treatment of chronic heart failure.* 261. Wells, G. H.

Heart failure is inability of the heart to maintain blood circulation under ordinary conditions, and the object of treatment, therefore, is restoration of the exhausted heart muscle and reestablishment of competent circulation.

Rest is important, and if heart failure is marked, rest should be absolute and mental as well as physical. But rest is often overdone; a certain amount of exercise is often beneficial. Unusual acceleration of pulse, heart pain, or exhaustion, are signs of too much exercise. The diet should supply sufficient nourishment for the cardiac muscle without producing digestive disturbance. In severe cases, especially with œdema, restrict the diet to white of egg with a little orange juice and milk; in milder cases allow milk, eggs, soft vegetables, and moderate amounts of meat. Tea, coffee, and tobacco should usually be discontinued, and restriction of salt is often beneficial.

Both physiologic and homœopathic medication have definite places in the treatment of chronic heart failure. Indiscriminate administration of so-called heart stimulants must be condemned. There are five physiologic remedies of use in this condition.

Digitalis, fifteen to twenty drops of the tincture, three to six grains of the powdered leaves, or three or four tablets of digitalin hypodermically, is by far the most important heart remedy; but its use is practically confined to cases with auricular fibrillation, and it is not at all indicated in cases of heart failure with or without dilatation, in which the pulse is regular. Reduce the dose when the pulse rate is lowered to eighty and when normal rhythm is restored. This will avoid cumulative action of the drug. In proper cases the effects of digitalis are marvelous, but the giving of this drug to every heart case is pernicious.

Strophanthus, like digitalis, is indicated only in auricular fibrillation, but it is inferior to digitalis. It may be given, when the latter fails, in five to ten drop doses of the tincture three or four times daily. Intravenous use of 1–200 grain of strophanthin in extreme cases of circulatory failure with fibrillation may precede the oral administration of the more slowly acting digitalis.

Theobromin is valuable in advanced cases with anasarca and regular pulse rate, five grains of sodium acetate of theobromin in capsule every two or three hours being used. It reduces dropsy by increasing urine excretion and should be reduced when sufficient diuresis has been established. Its long continued use may irritate the kidneys.

"*Strychnin*, despite the almost idolatrous respect with which the drug is regarded by the majority of physicians . . . seems to have little or no action directly on the heart." It improves the tone of the vasomotor system and may thereby be of value in chronic heart disease.

Morphin may save life by enabling an exhausted patient to get needed rest, but it should be used with caution.

Nux vomica is useful especially in cases that have flatulency, digestive disturbances, constipation, and nervous irritability; and in those resulting from the excessive use of tobacco and alcohol.

Cactus and *cratægus* are indicated in beginning heart failure if subjective symptoms in the region of the heart are prominent, such as a feeling of constriction around the heart, pain running up under the left clavicle, and pericardial soreness to pressure.

Aconite is of use when painful sensations in the heart produce nervous restlessness and fear of death.

Gold chlorid is often very efficient in cases with arterial and cardiac sclerosis, especially if accompanied by general debility and mental despondency.

Lycopodium, especially in higher potencies, should be used in senile cases with marked flatulency and intestinal toxæmia.

Digitalis in daily one-grain doses of powdered leaves is often useful in cases of senile heart with irregularities due to auricular fibrillation.

3. *Sick-wastage in the Army and inflammation of connective tissue as an important causative factor.* 269. Doyle, T. L.

4. *The hæmorrhagic disease of the newly born, with report of a case.* 274. Seybert, C. H.

5. *The control of tuberculosis in New York City.* 280. Millis, W. S.

June, 1918

6. *The influence of Hahnemann upon the practice of medicine.* 321. Gram, T. J.

7. *The passing of the idealist.* 335. Northrop, H. J.

"Now is the time of the passing of the homœopathic idealist. . . . Whether his professional demise is to be mourned or welcomed I will not say, but . . . he has been a millstone around the neck of the homœopathic profession."

"How few works are brought out by homœopathic writers? . . . Is the average homœopath so busy studying his *materia medica* . . . that he has not the time to add to the literature of his school?"

8. *The infectious diarrhæas of infancy.* 339. Raue, C. S.

Exclusively breast-fed infants rarely develop enteritis. The practice of boiling or pasteurizing milk has reduced infantile death rate during summer months. If diarrhœa develops, discontinue milk because it is a good culture medium

for bacteria. On the first day give boiled water, barley water, or weak tea. Flush bowels with enemata. On second day lamb or chicken broth cooked with rice or barley, strained and cooled and the fat removed, may be given, with water between feedings. If on the third day the temperature is normal and the stool contains no curds, milk, preferably beginning with albumin milk, may gradually and cautiously be added.

9. *Value of the subjective symptoms in aural diagnosis.* 350. Palen, G. J.

10. *The evolution of ultra-violet rays in the treatment of skin disease.* 352. Berustein, R.

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13. *Teaching sex hygiene in schools.* 1. Ross, A. I.

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14. *The nurse and her call to duty.* 50. Hanchette, W. H.

The British Homœopathic Journal, May, 1918

15. *Recent cases of pneumonia in adults treated in the London Homœopathic Hospital.* 129. Goldsbrough, G. F., Wheeler, C. E., Weir, J., and Tyler, M.

The histories of seventeen cases of pneumonia are related.

16. *Argentum.* 147. Stonham, T. G. (To be concluded).

This is a good article on silver and silver nitrate.

June, 1918

17. *An obstetric-gynæcological case: surgery intervening. With general considerations on appendicitis during pregnancy; the drainage of pelvic abscess; parotitis following pelvic disease; the factors of pulse and temperature in the prognosis of acute abdominal cases.* 161. Burford, G.

18. *Argentum.* 187. Stonham, T. G. (Concluded).

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19. *Points of pathological interest.* 193. Lowe, E. C.

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20. *The consulting physician and the physician with whom he consults.* 543. Jones, E. G.

21. *Dementia præcox, the problem of state medicine.* 551. Holmes, B.

22. *The eye in Bright's disease.* 564. Fisher, H. F.

The Polychrest, July, 1918

23. *The legitimate use of animal experimentation as applied to the homœopathic materia medica.* 49. Hinsdale, A. S.

The Homœopathic Recorder, June, 1918

24. *The suppression of disease, with illustrative cases.* 241. Farrington, H.

25. *If not homœo — why not?* 248. Baldwin, V. I.

26. *China officinalis.* 203. MacFarlan, D.

The proving recorded here is of the sort that discredits homœotherapy and its practitioners. Any and all sensations and symptoms experienced by the prover during the course of the proving seem to have been set down as drug effects, and no attempt to control the experiment was apparently made. Such provings could easily be obtained with any inert substance. Our chaotic materia medica is not in need of additional provings but of scientifically conducted reprovings. Editorial culling of manuscripts should be sufficiently careful to guard against further debasement of the already cluttered homœopathic literature.

27. *Healing the sick.* 266. Jones, E. G.

28. *The X-ray treatment of cancer.* 273. Grubbe, E. H.

29. *Cases of inoperable cancer of the bladder.* 274. Mitchell, C.

July, 1918

30. *Homœopathy, the only scientific and actually curative system of medicine.* 289. Lutze, F. H.

31. *Reading the face to find the indicated remedy.* 317. Jones, E. G.

32. *Datura stramonium, "Jimson weed."* 322. Yost, W. M.

33. *A hepar sulphur case.* 324. Ghose, R. C.

34. *Acidosis and acidity of the urine.* 326. Mitchell, C.

35. *The quantitative determination of sugar in the urine.* 329. Mitchell, C.

**The Journal of the Southern Homœopathic Medical Association,
May—June, 1918**

36. *On the estimation of curability from the standpoint of homœopathy.* 27. Rabe, R. F.

"Homœopathy teaches that each case which presents itself for treatment is a problem in itself, demanding for its solution the art of individualization. The latter is indeed the keystone of homœopathic practice; here it is, however, that we are in danger of confining our art to the selection of the suitable

remedy only, without extending the process of individualization so that it shall include diagnosis of the morbid condition as well. In other words, we overlook the warning contained in paragraph 3 [of Hahnemann's *Organon*], to perceive clearly what is curable in disease.

"By doing so we are very likely to attempt the impossible. . . . By diagnosis, today, we understand far more than the mere naming or labeling of the disease. Diagnosis may and does lead to this, but in addition must tell us what tissues or organs are involved, how or in what manner they are involved, and how far tissue change or destruction has proceeded. Without this knowledge we are poorly equipped to apply remedial measures. To obtain such information usually requires not only the modern methods of physical diagnosis, but also the methods and technic of the pathological and bacteriological laboratories."

37. *The problem of seminal vesiculitis.* 30. Washburn, V. D.

Forty-one per cent. of the author's series of cases with urethral disease were complicated by seminal vesiculitis. Rectal palpation should be practiced in all such cases. Patients with uncomplicated seminal vesiculitis, who are resistant to other treatment, should be vasostomized.

38. *Cardiac irregularities: their recognition, importance and treatment.* 33. Williams, C. P.

Cardiac disorders that may be recognized by alterations in the rate and rhythm of the pulse are the following:

1. *Premature beat* and *extra systole* cause an occasional pause in the radial pulse.

2. *Sinus arrhythmia* is a rhythmic alteration of rate dependent upon the respiratory movements of the chest. It is found especially in children and is of little importance.

3. *Tachycardia* is found in fever, Basedow's disease, tuberculosis, etc. *Ibers* is a remedy that is often useful when the tachycardia is not due to hyperthyroidism. Others are *Lycopus virginicus*, *Aconitum napellus*, *ignatia*, *laurocerasis*, *amyl nitrite*, *glonoin*, and *belladonna*.

4. *Auricular flutter* is the most important cardiac irregularity met with in practice. It occurs in 50 to 70 per cent. of all cases of organic heart disease. There is complete irregularity of the pulse. *Digitalis* is the drug to be given in this condition, and the results from its use are brilliant.

5. *Heart block* or *Adams-Stokes syndrome* may be partial or complete. A most frequently used remedy in this condition is *atropin*; *arsenic iodid* given homœopathically is often of use, but *digitalis* and *strophanthus* are contraindicated.

39. *Auricular fibrillation and auricular flutter.* 37. Askenstedt, F. C.

40. *Radium as a hæmostatic in hæmorrhagic disease.* 48. Wiggers, H. H.

The Chironian, May, 1918

41. *Royal S. Copeland, A.M., M.D., F.A.C.S.* 520. Hayner, J. C.

The Indian Homœopathic Review, October, 1917.

42. *Acute articular rheumatism.* 257. Majumdar, P. C.

Pacific Coast Journal of Homœopathy, June, 1918

43. *The University of California Medical School.* 227. Moffitt, H. C.

44. *Homœopathy; its opportunity in the University of California.* 284. Hill, S. A.

45. *The homœopathic profession of the Pacific States.* 288. Young, E. W.

46. *The Red Cross and humanity.* 293. Hale, M.

47. *Calcarca renalis phos.* 304. Fournier, J. N. P.

This remedy, after fifteen to twenty days of treatment, causes tartar deposits on the teeth to disappear; it cures pyorrhœa alveolaris and has a tendency to dissolve renal and other calculi. F., a dentist, cites several cases to prove his contention.

48. *Ætiology and early symptomatology of paresis.* 313. Wayte, E.

July, 1918

49. *Radio-activity in therapeutics.* 324. Cowperthwaite, A. C.

The Clinique, April, 1918

50. *Treatment of diabetes mellitus in general practice.* 150. Horm, W. M.

51. *New York's experience with poliomyelitis.* 154. Benson, R. A.

52. *Heart disease within and without.* 159. Halbert, H. V.

53. *The biological classification of the pneumococci, and the methods by which they are recognized.* 163. Frederickson, C. H.

54. *Parasitic disease.* 168. Klaus, R. W.

June, 1918

55. *Calcium.* 242. Johnston, H. E.

July, 1918

56. *Obstetric economics*. 272. Yeomans, T. G.

57. *Three great biological principles of medicine*. 282. Lehman, S. W.

58. *Physical therapeutical agents as adjuvants to the indicated remedy*. 286. Smith, A. E.

GENERAL MEDICINE

Glucose intravenously as a therapeutic measure. Litchfield, L., *Jour. Am. Med. Ass.*, 1918, *lxxi*, 503.

Pneumonia and other infectious diseases have been treated by L. with intravenous infusions of hypertonic (25 per cent.) glucose solutions. Most of the cases so treated showed immediate improvement. The amount injected varied, 250 cc. being the usual dose given in about one hour to an adult. Reactions sometimes occurred and consisted of nausea, vomiting, chill, sweat, and rise of temperature. Some of the pneumonia cases that showed improvement had previously received typic anti-pneumococcus serum without having been benefited thereby.

[In an article in the July GAZETTE, Ulrich and Adams report apparent success in a series of cases of puerperal septicæmia treated with isotonic glucose solutions.]

A vaccin for the treatment of bronchial asthma; report of twenty cases. Hutcheson, J. M., and Budd, S. W., *Am. Jour. Med. Sci.*, 1918, *clv*, 826.

The authors recommend a vaccin made as follows: "1 cc. of washed sputum is incubated in 10 cc. of broth and 1 or 2 drops of guinea-pig serum for a period of forty-eight hours. At the expiration of that time the culture is standardized and killed by heat of 60 degrees C for a period of two hours. Further decomposition is prevented by adding carbolic acid until a 1 per cent. solution results. This is cultured out to ensure sterility of the suspension. The vaccin is then diluted with normal saline until each cubic centimeter of the suspension contains 500,000,000 to 1,000,000,000 organisms. The initial dose is 5 minims and each subsequent dose is increased by 1 minim."

The beneficial effects following the use of this vaccin are believed to be due to immunization against an anaphylotoxin that causes anaphylactic (asthmatic) symptoms and that is produced by the digestion of and split protein formation from the sputum and the bacteria it contains. The vaccin is supposed to contain these anaphylotoxic products, and their frequent injection leads to immunity against them.

The effect of the treatment has been observed upon twenty cases of typical bronchial asthma. Twelve of these have been

completely relieved to date by one to five injections, the longest period of freedom being sixteen months and the shortest six weeks. Five cases showed distinct improvement either in the frequency of seizures, their severity, or their duration. Two cases showed no improvement, and one seemed to be aggravated. The injections were given twice a week, but shorter intervals may be more desirable.

The treatment of empyema. Rinehart, S. M., and Oelgoetz, A. Q., *Jour. Am. Med. Ass.*, 1918, lxxi, 274.

To shorten the duration of the disease as well as the time of convalescence, the chest cavity is drained every other day and 2 per cent. formaldehyde in glycerine is injected.

Active immunization of infants against diphtheria. Zingher, A., *Am. Jour. Dis. Child.*, 1918, xvi, 83.

The negative Schick reaction indicates definitely the presence of immunity to diphtheria. It is of value also for indicating in children over two years old the *development* of a natural immunity that seems to be *permanent*.

This was shown by the fact that in over 3,000 children, who had given negative Schick reactions at the time of the first test, the negative test persisted in almost all cases over a period of three years. In children below nine months of age the immunity, as shown by a negative Schick test, is only temporary and derived from the mother through placental circulation, and in the breast-fed infants through breast milk.

After about nine months (sometimes as early as the sixth or as late as the twelfth months) the infant loses this conferred immunity and then gives a positive Schick test. At about $1\frac{1}{2}$ or 2 years of age most children begin to develop natural immunity which is probably life-long. With increasing ages larger and larger percentages of children acquire this natural immunity, so that about 85 to 95 per cent. adults are immune to diphtheria.

To prevent infection with diphtheria during the susceptible age, Z. recommends that "all infants below 12 and if possible below 18 months of age should be actively immunized with three doses, each 1.0 cc. of toxin-antitoxin . . . repeated every even days." All children over 16 months of age, and all youths and adults giving a positive Schick reaction, should be similarly immunized.

Induration or rheumatic headache. Patrick, H. T., *Jour. Am. Med. Ass.*, 1918, lxxi, 82.

Several years ago it was discovered by Swedish masseurs that some cases of headache had considerable tenderness in the occipital and suboccipital regions. It was later found that this

pain had its real seat in the musculature and in and about the joints of the upper neck, and that it often radiated to various portions of the head. This headache, which is called rheumatic because of its apparent close connection to rheumatism and especially tonsillar and other focal infections about the head, may be acute but is usually subacute or chronic. It is rare in persons under twenty years old; more than half of all patients afflicted with it are over forty.

Symptomatically it differs from neurasthenic and psychasthenic headaches in that it is a real pain and is more or less continuous. Its location is important. It is never frontal or vertical alone, but practically always occipital or suboccipital, although it may radiate thence to the vertex and to the frontal or temporal areas. There is no surface sensitiveness to touch but tenderness to deep pressure, particularly at the muscular insertions on the occiput, in the upper neck posteriorly and laterally, and in the occipital portion of the occipitofrontalis. Sometimes the trapezius, sternomastoid, parietal, or temporal muscles are tender. Cold applications generally aggravate the pain, and heat alleviates it. It is increased by stooping, straining, coughing, and physical exertion generally. Fever and leukocytosis are nearly always present in acute cases, but in chronic cases much less frequently, although repeated examination will usually show a slight rise in temperature at some period of the disease. Treatment consists in removing the primary focus of infection, tonsillectomy often resulting in immediate cure of acute cases. Other sources of infection may be in the teeth, accessory sinus, ears, etc.

The diagnosis of fracture of the hip. Guy, G. W., *Bost. Med. & Surg. Jour.*, Sept. 5, 1918, *clxxix*, 316.

The three cardinal symptoms of fracture of the hip are inability to stand or walk, eversion of foot, and severe pain on motion. Given these three symptoms, the diagnosis is reasonably certain, and the older the victim the more reliance can be placed upon them. Shortening of the leg is almost always present, but it is less readily detected. Crepitus is usually absent in impacted fractures, but this symptom should not be sought incautiously, as manipulation may be harmful. The hips of old people are broken much more easily than they are dislocated, hence a diagnosis of dislocation in the aged should be guarded against.

The precipitin reaction in the urine in pneumonia. Quigley, W. J., *Jour. Infectious Dis.*, Sept., 1918, *xxiii*, 217.

A soluble substance is elaborated by growing pneumococci and is demonstrable in urine and blood of pneumonia patients

by means of precipitation with antipneumococcus serum. The test upon the urine is very simple: small quantities of urine clarified by centrifugation are stratified with equal amounts of immune serum in small test-tubes, incubated for one hour and observed at intervals. The precipitate usually appears within fifteen minutes, if at all. Eighty-one per cent. of cases of *Types I, II, and III* showed the reaction at some time during the course of the disease. The test serves to differentiate these three types, if it is positive.

The prognosis of exophthalmic goitre. Stanton, E. M., *Am. Jour. Med. Sci.*, *clvi*, 369.

Basedow's disease is usually self-limited, that is, 60 to 70 per cent. of cases afflicted with it show spontaneous recoveries after a period of five or six years. There are only two major factors in the non-operative treatment of thyrotoxicosis: rest and time. Drugs and various other measures may give some temporary relief, but there is no proof that such improvement is anything but what may be expected in the natural course of this disease.

Concerning surgical treatment it may be said that removal of a portion of the thyroid gland produces profound immediate improvement in the subjective discomfort of the patient and some improvement in pulse rate and tremor, and a gain in weight. This initial improvement, however, rarely amounts to a cure: the exophthalmos usually persists for years, and the heart remains irritable. Some cases may fail to improve and others may get worse, but about 80 per cent. will probably be cured.

"It is useless for the surgeon to claim that there is no medical side to the treatment of exophthalmic goitre." There is probably little difference between medical and surgical end-results as regards mortality or morbidity at the end of five or six years. Patients surviving operation are promptly relieved of the most distressing symptoms; but against this stands the primary mortality that must always accompany operation for exophthalmic goitre.

"In the future the man best able to treat exophthalmic goitre will be the one who has developed the judgment necessary to enable him to select the treatment, medical or surgical, best adapted to the individual case. The decision will depend upon many factors, not the least of which will have to do with the social condition of the patient, and whether she or he can afford the time and expense necessary for the prolonged rest required to effect a medical cure."

The relation of food idiosyncrasies to the diseases of childhood.

Talbot, F. B., *Bost. Med. & Surg. Jour.*, Aug. 29, 1918, *clxxxix*, 285.

Dermal tests done with various proteins, particularly egg albumen, cow casein, and cereals, will often determine the cause of asthma, recurrent bronchitis, eczema, hay fever, etc., to be a hypersensitiveness to these proteins. Avoidance of foods containing them may cure the case.

A note on the use of corpus luteum to prevent the painful breasts of menstruation. Lissner, H., *Endocrinology*, 1918, *ii*, 12.

A young married woman, aged 24, complained of very painful breasts at the menstrual period. She was given a five-grain lutein tablet three times a day, and no pain appeared. During an interval of time covering twenty-two menstrual periods she took the tablets ten times, and was entirely free from pain at these times. She did not take them at twelve of the twenty-two periods and suffered severe pain at each one.

Renal glycosuria. Beard, A. H., and Floyd, G., *Arch. Int. Med.*, 1918, *xxi*, 704.

Renal glycosuria, that is, excretion of sugar in the urine due to abnormal permeability of the kidney, is a rare condition. It differs from true diabetes mellitus in that the blood sugar is normal in amount and that the amount of sugar excreted is usually unaffected by variation in carbohydrate ingestion. In other words, it is not a disturbance of carbohydrate metabolism but a lowered carbohydrate excretion threshold of the kidneys. The amount of sugar excreted is usually small and its presence is usually discovered accidentally, while uranalysis is done for other reasons. The condition causes no symptoms and is apparently not amenable to treatment. It should be differentiated from mild and atypical cases of diabetes.

Lumbar puncture in meningeal hæmorrhage of the new-born.

Brady, J. M., *Jour. Am. Med. Ass.*, 1918, *lxxi*, 347.

Meningeal hæmorrhage of neonati is not rare. In all suspected cases, lumbar puncture should be done and repeated, if necessary. B. reports three cases that were punctured. Two of them recovered completely and later showed no clinical effects of the hæmorrhage, and one died because the hæmorrhage was supratentorial and could not be drained by lumbar puncture.

Treatment of colds. Dennett, D. C., *Bost. Med. & Surg. Jour.*, 1918, *clxxxix*, 41.

Treatment of colds should be begun as early as possible. Local treatment is more important than general internal medi-

cation. An attempt should be made to disinfect the site of the inflammation. Apply a 50 per cent. solution of silver vitellin, silvol, or argyrol to the everted eyelids. Use the same solution in a curved tip syringe for spraying the post-nasal space; direct the patient to hold his head down for a moment, and as soon as the medicine appears in the nostrils the head should be held up and back and the silver solution snuffed up. Warn the patient not to blow his nose for at least an hour after the treatment, nor to dislodge the silver-impregnated mucus in the post-nasal space. If this treatment is properly given at bedtime the silver will remain in the nose and throat all of the night. If the silver solution causes much conjunctival irritation, put a little White's ointment in each eye. Local treatment of colds that may be carried out in the patient's home by himself or members of his family consists in putting one drop of 25 per cent. solution of silver in each eye, and two drops in each nostril, every three hours. When the drops are put in the nose the patient should lie flat on his back with his head well over the edge of the bed and so far extended that the drops will run up to the ethmoid region and back to the pharyngeal wall. Then the head should be turned slowly from side to side to insure maximum distribution of the solution. Rest in bed is very important.

A clinical consideration of Macewen's sign. Regan, J. G., *Am. Jour. Dis. Child.*, 1918, xvi, 13.

This sign was first described by Macewen of Edinburgh, who used it in the diagnosis of brain tumor and abscess. It consists in percussing the cranium. The percussion note is produced by the vibration of the cranial walls when struck and is modified by the consistency and volume of the cranial contents and their relative position to the bone. A thin skull is made to vibrate more readily than a thick one. The note obtained in healthy adults is generally high pitched. In normal infants, whose bones are united merely by membranes, the sound is so dull and flat that it is scarcely perceptible. Should the contents of an infant's cranium, however, increase sufficiently to produce tension, then the note becomes clear. In healthy children a dull note is produced, but if there is increased fluid the bones vibrate more readily and produce a clearer note. When the lateral ventricles are distended with fluid the percussion note is remarkably altered, its resonance being greatly increased. The exact musical quality of the note is difficult to describe, but it conveys the idea of hollowness. The upright position is best suited for eliciting the sign, and the pterion or a little behind it is the best place.

Wilcox's method of eliciting the sign consists in applying a stethoscope to the forehead just above the base of the nose, and tapping the skull in the parietal region, beginning at the parietal boss and gradually approaching the point at which the stethoscope is applied. The typical sign consists in a high-pitched, short, cracked-pot note, which is most distinct when percussion is done over, behind, or below the parietal boss; is unchanged as the percussion point passes downward, and diminishes in intensity and character as the percussing finger approaches the stethoscope. The reverse of this occurs when the normal skull is percussed. This is explained by the fact that normally the vibrations are conducted from the percussion point to the stethoscope by the bony wall, whereas when intracranial contents are increased and under pressure the vibratory waves are more easily transmitted through the cranial contents than along the bones.

Wilcox noted the presence of Macewen's sign in children with serous meningitis complicating gastro-intestinal disturbances, pneumonia, typhoid fever and influenza; also in various acute infections of the meninges, especially in tuberculous meningitis and poliomyelitis. It was absent in congenital hydrocephalus. The sign was reduced in intensity after lumbar puncture.

The curative and prophylactic value of vaccins in pertussis.

Barenberg, L. H., *Am. Jour. Dis. Child.*, 1918, xvi, 23.

Pertussis vaccin has no curative effect after the disease is established, but as a prophylactic it is of a certain amount of value.

BOOK REVIEWS

The Wassermann Test. Charles F. Craig, A.M. (Hon.), M.D. (Yale), F.A.C.S. Lieutenant Colonel, Medical Corps, United States Army; formerly Assistant Professor of Bacteriology and Pathology, Army Medical School, and George Washington University; Commanding Officer, Department Laboratory, Central Department, United States Army, Fort Leavenworth, Kansas. Pp. 239, illustrated with colored plates, half-tone plates, and fifty-seven tables. Published with authority of the Surgeon General, United States Army, by C. V. Mosby Co., St. Louis, 1918.

As the author states in the preface to this volume, "there is still a great deal of misunderstanding and confusion among the members of the medical profession regarding the exact value and limitations of the Wassermann test, both in the diagnosis of syphilis, and when used as a control of the treatment of the disease." A perusal of the book's contents will dispel this misunderstanding and confusion. Like most laboratorians, the author has a pet method which he has featured in the book, but not to the exclusion of other reliable modifications, many of which receive ample consideration. To the general practitioner the sections that deal with the nature of the reaction, its results and their interpretation in the various stages of syphilis, the effect of treatment upon it, and the use of the test as a control of anti-luetic treatment, should be particularly useful. The great prevalence of syphilis calls for such frequent use of the Wassermann reaction, that no

physician's library is complete without this or a similar book for handy reference. H. U.

The Hodgen Wire Cradle Extension Suspension Splint. Frank G. Nifong, M.D., F.A.C.S., with an introduction by Harvey G. Mudd, M.D., F.A.C.S., 124 illustrations. Price \$3.00 C. V. Mosby Co., St. Louis, 1918.

The Hodgen wire cradle extension suspension splint is again brought to the attention of the medical profession by the author of this well illustrated book. The particular advantages of this apparatus in the treatment of fractures of the femur, where extension with flexion is essential and suspension a matter of comfort and convenience to the patient, are emphasized. The often overlooked fact that immobility is non-essential in the treatment of intra-capsular fractures of the neck of the femur is mentioned, and the adaptability of the Hodgen splint in this condition is brought out. Among the many illustrations are some showing the ease with which the Carrel-Dakin method of wound treatment may be applied, with the splint *in situ*, and others showing ingenious suspending frames made of gas-piping, and the applications of the splint in the treatment of fractures of the upper extremity. H. J. L.

VOLUNTEER MEDICAL SERVICE CORPS

Statement by DR. FRANKLIN MARTIN, Member of Advisory Commission and Chairman of General Medical Board, Council of National Defense

Foreword

The Volunteer Medical Service Corps was authorized by the Council of National Defense on January 31, 1918. Under this authorization the membership of the corps consisted of all physicians who because of over-age, physical disability, dependents and essential home needs were not eligible for service in the Medical Reserve Corps of the Army and Navy.

Enlarged Scope of the Organization

On August 5th the Council of National Defense authorized a change in the scope of the organization and an increase and amplification of its Central Governing Board. Membership in the Corps, as now authorized, makes eligible to the Corps every legally qualified physician, including women physicians, holding the degree of Doctor of Medicine from a legally chartered medical school, without reference to age or physical disability, provided he or she is not already commissioned in the Government Service. This organization has now the approval of the President as indicated in the following letter:

*The White House, Washington,
12 August, 1918*

MY DEAR DR. MARTIN:

I have received your letter of August 5, laying before me the matured plan for the reorganized Volunteer Medical Service Corps, of which you ask my approval. This work was undertaken by you under the authority of

the Council of National Defense; it has had great success in enrolling members of the medical profession throughout the country into a volunteer corps available to supply the needs of the Army, Navy and Public Health Service. In coöperation with the General Medical Board of the Council of National Defense, the strong governing board of the reorganized corps will be able to be of increasing service, and through it the finely trained medical profession of the United States is not only made ready for service in connection with the activities already mentioned, but the important work of the Provost Marshal General's Office and the Red Cross will be aided and the problems of the health of the civilian communities of the United States assured consideration. I am very happy to give my approval to the plans which you have submitted, both because of the usefulness of the Volunteer Medical Service Corps and also because it gives me an opportunity to express to you, and through you to the medical profession, my deep appreciation of the splendid service which the whole profession has rendered to the nation with great enthusiasm from the beginning of the present emergency. The health of the Army and the Navy, the health of the country at large, is due to the coöperation which the public authorities have had from the medical profession; the spirit of sacrifice and service has been everywhere present, and the record of the mobilization of the many forces of this great Republic will contain no cases of readier response or better service than that which the physicians have rendered.

Cordially and faithfully yours,

(Signed) WOODROW WILSON.

Dr. Franklin Martin,
Advisory Commission,
Council of National Defense.

At a meeting of the Central Governing Board, held on Friday, August 2, it was moved by Dr. Sawyer, seconded by Dr. Martin, that the Central Governing Board shall consist of the present Central Governing Board (excepting Sherk, Bradford and Brophy) and others as follows:

Surgeon General William C. Gorgas, U. S. A.
Surgeon General William C. Braisted, U. S. N.
Surgeon General Rupert Blue, U. S. P. H. S.
Provost Marshal General E. H. Crowder.
Dr. Franklin Martin, Chairman of Committee on Medicine and Sanitation, Council of National Defense.
Dr. Edward P. Davis, President, Volunteer Medical Service Corps.
Dr. John D. McLean, Vice-President.
Dr. Charles E. Sawyer, Secretary.
Admiral Cary T. Grayson, U. S. N.
Dr. F. F. Simpson.
Dr. Frank Billings.
Dr. H. D. Arnold.
Mr. W. Frank Persons — Red Cross.
Dr. Victor C. Vaughan.
Dr. William H. Welch.
Dr. Robert L. Dickinson, Chief of Staff's Office.
Colonel R. B. Miller, U. S. A., Chief of Personal Division.
Surgeon R. C. Ramsdell, U. S. N., Chief of Personal Division.
Colonel James S. Easby-Smith, Executive Officer.
Dr. Joseph Schereschewsky, Assistant Surgeon General (Personnel).
Dr. G. H. Mayo or W. J. Mayo.
Dr. William Duffield Robinson.
Dr. George David Stewart.
Dr. Duncan Eve, Sr.
Dr. Emma Wheat Gillmore.

General Plan

The Volunteer Medical Service Corps is exactly what its name indicates. It is a gentleman's agreement on the part of the civilian doctors in the United States who have not yet been honored by commissions in the Army and Navy, and a representative board of governors consisting of officials of the Government associated with lay members of the profession, in which the civilian physician agrees to offer his services to the Government if required and asked to do so by the Governing Board.

It is a method of recording all physicians who are not yet in service and classifying them so that their services when required will be utilized in a manner to inflict as little hardship on the individual as possible. It is a method by which every physician not in uniform will be entitled to wear an insignia which will indicate his willingness to serve his Government.

As more than sixty per cent. of the physicians of the country will be utilized in caring for the industries at home and the health of the home people, this large percentage of necessity will be expected to maintain their home status and continue their ordinary professional work.

VOLUNTEER MEDICAL SERVICE CORPS OF THE UNITED STATES AUTHORIZED BY THE COUNCIL OF NATIONAL DEFENSE APPROVED BY THE PRESIDENT OF THE UNITED STATES

INFORMATION

1. *What is the Volunteer Service Corps?*

The Volunteer Medical Service Corps is an organization which provides means for obtaining quickly men and women for any military or civil medical service required in the war emergency. It furnishes recommendations and necessary credentials to assure the best medical service, both military and civil.

2. *How should application for membership be made?*

Upon request to the Volunteer Medical Service Corps, Council of National Defense, Washington, D. C., application blanks and circulars of information will be sent. When received, the application form should be filled out completely, in accordance with instructions contained in the circular of information. The application should then be mailed to the Volunteer Medical Service Corps, Council of National Defense, Washington, D. C.

3. *What is to be gained by the creation of this organization?*

Placing on record all medical men and women in the United States; aiding Army, Navy, Public Health Service, Provost Marshal General's Office and the American Red Cross in supplying war medical needs; providing the best civilian medical service possible; giving recognition to all who record themselves either in Army, Navy, Public Health Service, Provost Marshal General's Office, Red Cross activities or civilian service.

4. *What is meant by classification?*

It is the record of information furnished by the individual physician so that when the need arises, he may be requested to perform service that

will be mutually advantageous to the individual and the service to which he may be assigned.

5. *Who are eligible?*

Every legally qualified physician holding the degree of Doctor of Medicine from a legally chartered medical school without reference to age or physical disability is eligible for membership in the Volunteer Medical Service Corps provided he or she is not already commissioned in the Government service.

6. *How is eligibility to the Corps determined?*

Upon information obtained from application blanks, three personal references and the Executive Committee of the state in which the applicant resides. Based upon the information thus secured, the Central Governing Board will finally pass upon applications.

7. *Does membership in the Corps carry with it rank and pay?*

This Corps is not authorized to bestow rank. Arrangements for compensation shall be made between a member requested to perform a specific duty and the agency requesting service. The matter of compensation and place of service whether with or without rank must be determined at the time said request is made. When a member of the Corps accepts service in the Medical Reserve Corps of the Army, the Naval Reserve Force, the United States Public Health Service, the American Red Cross, or any governmental department he or she will be accorded the rank and pay incident to the service in the department in which he or she has enrolled.

8. *Will any member of this Corps be ordered to active duty?*

No member will be ORDERED to render any service. Requests to perform specific duties according to qualifications and availability under the classification of the Volunteer Medical Service Corps may be made from time to time as emergencies arise.

9. *What will be the probable character of service member will be requested to render?*

- (a) Medical Reserve Corps.
- (b) Naval Reserve Force.
- (c) United States Public Health Service.
- (d) American Red Cross.
- (e) Local and medical advisory boards.
- (f) State and local health departments.
- (g) Medical schools and hospitals.
- (h) Industrial plants.
- (i) Civil communities.

Caring for civil communities, stripped of medical attention.

Caring for practices of physicians in military service.

Reclamation of registrants rejected for physical unfitness.

Services to needy families and dependents of enlisted men.

- (j) Miscellaneous service.

10. *If members of the Corps are recommended for active military or naval service, in what order will they be recommended.*

(a) Physicians under fifty-five years of age without dependents and without physical disabilities which are disqualifying will first be recommended. Following this group, physicians under fifty-five years of age without obvious physical disabilities which are disqualifying and with not more than one dependent in addition to self (Class I of the Volunteer Medical Service Corps) will be among the first to be recommended for actual war service. Any physician under fifty-five years of age who is without an obvious physical disability which is disqualifying and whose dependents have an income sufficient for the support of dependents other than that derived from the practice of his profession, may be recommended to enroll in the Medical Reserve Corps of the Army, the Naval Reserve Force or the United States Public Health Service when in the opinion of the respective Surgeons General his services are needed.

(b) Physicians under fifty-five years of age without obvious physical disabilities which are disqualifying and with not more than three dependents in addition to self (Class II of the Volunteer Medical Service Corps) will be the next group to be recommended to apply for active military or naval service.

- (c) The next group recommended to enroll for active duty with the Army Navy or Public Health Service, (Class III) will be physicians under fifty years of age who are without obvious physical disabilities which are disqualifying and with more than three dependents in addition to self.

11. *What are the exceptions in these groups?*

The exceptions in the above groups of physicians are as follows:

- (a) Those essential to communities.
- (b) Those essential to medical schools and hospitals.
- (c) Those essential to health departments.
- (d) Those essential to industries.
- (e) Those essential to local and medical advisory boards.

12. *How will exceptions to these groups be determined?*

- (a) *Essential to communities.*

Essential community need will be determined by the Central Governing Board on recommendation of representatives of the Central Governing Board appointed by the Board to make a survey of local conditions.

- (b) *Essential to institutions.*

Essential institutional need will be established after conference between representatives of the Central Governing Board of the Volunteer Medical Service Corps and representatives appointed by the governing bodies of the institutions concerned.

- (c) *Essential to health departments.*

Essential health department need will be determined after conference between representatives of the Central Governing Board, Volunteer Medical Service Corps and representatives of health departments.

- (d) *Essential to industries.*

Essential industrial need will be determined after conference between representatives of the Central Governing Board, Volunteer Medical Service Corps and accredited representatives of industries involved.

- (e) *Essential to local and medical advisory boards.*

Essential local and medical advisory board needs will be determined after conference between representatives of the Central Governing Board, Volunteer Medical Service Corps and representatives of the Provost Marshal General's Office.

13. *When will physicians who are not classified for actual military or naval service be requested to perform service?*

When the emergency arises the following may be requested to perform duties in accordance with their qualifications and expressed merits as indicated by the information contained on their application blanks:

- (a) Physicians over fifty-five years of age.
- (b) Physicians with obvious physical disability which are disqualifying.
- (c) Those rejected for all government service because of physical disability.

14. *What are some of the duties that this last group of physicians ineligible for active military service may be requested to perform?*

- (a) Deducting those members of the medical profession who will eventually be in active military, naval or public health service, fully seventy-five per cent. of the remainder will be encouraged to continue at their home duties.
- (b) Some of these may be called upon to supplement their private practices by performing part time service to meet community needs hitherto performed by men called to active duty.
- (c) Twenty-five per cent. of those not actually engaged in war service (possibly 20,000 in number) who are now engaged in home duties but who have agreed to do work of any kind, anywhere, upon request of the Central Governing Board, will as the emergency arises be recommended for duty in the following places:
 1. Local and medical advisory boards.
 2. Medical schools and hospitals.
 3. Industrial plants.
 4. Health Departments.
 5. Communities lacking medical service.

15. *How does enrollment in this Corps differ from actual conscription?*

The Volunteer Medical Service Corps is exactly what its name indicates. It is a gentleman's agreement on the part of the civilian doctors of the United States who have not yet been commissioned in the Army or Navy or enrolled in the Public Health Service, or in the service of the Provost Marshal General, and a representative board consisting of government officials associated with lay members of the profession in which the civilian physicians agree to offer their services to the Government if requested to do so by the Central Governing Board.

16. *In what way can this Corps aid the Government?*

By recording all physicians who are not yet in service and classifying them so as to utilize the talents and facilities of individuals to the best advantage and inflict as little hardship on the individual as possible, in accordance with the letter from the President of the United States authorizing the Corps — "to supply the needs of the Army, Navy and Public Health Service . . . aiding in the important work of the Provost Marshal General's Office and Red Cross . . . and the problems of the health of the civilian communities of the United States." It provides a method by which every physician not in uniform will be entitled to wear an insignia which indicates his willingness to serve his Government. It furnishes a method by which the medical needs of the nation may be provided for through a representative board of physicians who know the needs of the Army, Navy, Public Health Service, Red Cross and civil communities.

17. *To what extent must provision be made for essential civilian and industrial medical needs?*

A large percentage of the physicians of the country will be required to care for their respective home communities and to meet civilian health needs. This percentage of necessity will be expected to maintain their home status and continue their professional work.

18. *Will enrollment in the Volunteer Medical Service Corps excuse a physician in the draft age from registration under the Selective Service Law or from being classified therein?*

Positively not.

19. *Why then enroll in the Volunteer Medical Service Corps if it does not supplant the draft?*

(a) Under the Selective Service Law individuals in the draft age are registered and inducted into the service as privates. The Volunteer Medical Service Corps enrolls and classifies individuals as prospective commissioned officers and will when requested assist in establishing the individual's status when he requests transfer from the enlisted forces to the commissioned branches of the service.

(b) Enrollment in the Volunteer Medical Service Corps definitely registers the physician as a patriot and provides definite governmental recognition of his willingness to serve.

20. *Why should every physician in the United States enroll in the Volunteer Medical Service Corps?*

(a) The unsurpassed record of volunteer enrollment for actual service on the part of the medical profession must be maintained.

(b) The Army and the Navy must not be hampered for a moment for lack of doctors to care for the sick and wounded boys fighting our battles at the front.

(c) The public health must be conserved.

(d) The medical needs of the Provost Marshal General must be adequately met.

(e) The great industries furnishing materials of war, employing thousands of patriotic workers, must have medical service.

(f) The home folks, the old and the young wearily waiting over here, must have doctors.

(g) Recording, classifying, and careful distribution and full utilization of our entire profession of medicine will enable us instantly to supply all demands, and our utmost resources will then be available to aid in establishing a permanent peace that will forever make this world a safe place in which women and children may live.

HEALTH INSTRUCTIONS THROUGH DRAFT BOARDS

Washington, D. C., Sept. 23. — Provost Marshal General Crowder to-day called attention to a circular of instructions prepared by the United States Public Health Service for registrants declined in the draft because of physical disability. The circular, copies of which have been placed in all the local draft boards throughout the country, is the result of a recommendation made to General Crowder by Surgeon General Rupert Blue of the United States Public Health Service. The Surgeon General points out that in the first draft about one-third of the men examined were rejected for physical disabilities and that hundreds of thousands will be added as a result of the examinations to be made of the new registrants.

"It is highly desirable," said Surgeon General Blue, "that the men found to be disqualified for military service by the examining physicians of the local draft boards should receive definite instructions as to the meaning of their disabilities and that a strong appeal be made to them to correct these disabilities as far as possible. But the object of this measure is not only to reclaim men for military service or for such service as they can perform, but to lessen the burden of illness and disability among those engaged in essential industrial work. It is hoped that the instruction in this circular, which is really a primer of the physical defects of the nation, will reach far beyond the draft board and be utilized by all agencies interested in improving the public health to instruct the people with regard to their physical deficiencies and the ways and means by which they can be remedied."

According to the United States Public Health Service experience everywhere shows that the proportion of persons with physical impairments is considerably greater in persons between 30 and 40 than in those between 20 and 30 years of age. This waning vitality at ages over 30, so commonly accepted as inevitable, can be postponed to a large extent. In this connection, it is pointed out that 60 per cent. of the physical defects found in the last draft were of a preventable or curable nature.

In addition to furnishing all the local draft boards throughout the country with a sufficient number of the circulars to supply one to each registrant rejected because of physical disability, arrangements have been made to furnish specimens of the circular to life insurance companies, fraternal organizations, labor unions, employers of labor and others who desire to reprint the circular in its present official form for wider distribution.

"The United States Public Health Service will be glad to furnish specimens of this circular on application and urges all organizations that can reach large groups of people to reprint and distribute the circular and thus contribute materially to the public welfare and the national defense."

The circular issued by the United States Public Health Service is entitled "Information for Guidance and Assistance of Registrants Disqualified for Active Military Service Because of Physical Defects." It is a four-page leaflet, containing specific information relating to the commoner causes of rejection or deferred classification, e. g., Defective Eyesight, Teeth and Disease, Feet, Underweight, Overweight, Hernia, Hemorrhoids, Varicocele, Varicose Veins, Bladder, Kidney and Urinary Disorders, Ear Trouble, Heart Affections, High Blood Pressure, Lung Trouble, Rheumatism, Venereal Disease, Alcohol, Nervous and Mental Disease, and Miscellaneous Conditions. The information is presented in simple form and has been approved by the highest medical authorities. At the end is a striking quotation from President Wilson, "It is not an Army we must shape and train for war; it is a Nation." This is followed by the following personal appeals:

"Do not go through life with handicaps that may be easily removed. Do not shorten your life, reduce your earning capacity and capacity for enjoying life, by neglecting your bodily condition."

"While other men are cheerfully facing death for the cause of democracy, do not shrink from facing a little trouble and expense to make yourself strong, healthy and fit."

Over a million copies of the leaflet have been sent out to the draft boards. Requests for specimen copies should be addressed to the United States Public Health Service, Washington, D. C.

PROGRAM AMERICAN ASSOCIATION OF CLINICAL RESEARCH

Tenth Annual Meeting, October, 19, 1918, Hotel McAlpin, Broadway, 33d and 34th Streets New York City, New York

SESSIONS

1. *Call to Order: Saturday, October 19, 10 a.m.*
2. *Opening Address:*
ROGER M. GRISWOLD, M.D.
Kensington, Connecticut.
3. *Report of the Secretary and Treasurer.*
4. *Nomination and Election of Officers.*
5. *The Next Place of Meeting.*
6. *Committee Reports:*
Research:
Doctors MONSON, CONKLIN, PEARSON.
Educational:
Doctors BARNARD, SMITH, ASKENSTEDT.
Journal:
Doctors LE FEVRE, McCANN, MACKENZIE.
Membership:
Doctors LARKEQUE, COLEMAN, GIBSON.
7. *Puzzling Experiences in Practice.*
FREDERICK WALLACE ABBOTT, M.D.
Taunton, Massachusetts.
8. *Tumors of the Urinary Bladder.*
LEON T. ASHCRAFT, M.D.
Philadelphia, Pennsylvania.
9. *The Value of Symptoms.*
DANIEL E. S. COLEMAN, M.D.
New York, New York.
10. *Paroxysmal Auricular Fibrillation.*
HAROLD FEIL, M.D.
Cleveland, Ohio.
Base Hospital, Camp Dix, New Jersey.
11. *Obstetrics: Conservatism.*
EDWIN R. FLEMING, M.D.
Medford, Massachusetts.
12. *Observations on Twelve Years, Experience with Obstetric Anæsthesia (Twilight Sleep).*
ROGER M. GRISWOLD, M.D.
Kensington, Connecticut.
13. *The Aged: A New Lease of Life.*
F. ST. CLAIR HITCHCOCK, M.D.
Greenwich, Connecticut.
14. *Hæmorrhoids.*
SIMON L. KATZOFF, M.D.
Bridgeport, Connecticut.
15. *Cancer.*
GEORGE J. OTT, M.D.
Boston, Massachusetts.

16. *War Chemistry.*
WILLIAM A. PEARSON, M.D.
Philadelphia, Pennsylvania.
17. *Infections: Physio-Therapeutics: Proteals.*
CURRAN POPE, M.D.
Louisville, Kentucky.
18. *Salivary Fistula Operations.*
JOHN HALL SMITH, M.D.
Boston, Massachusetts.
19. *Juvenile Delinquents: Manual Adjustment.*
Doctor R. KENDRICK SMITH.
Boston, Massachusetts.
20. *Essentials in Case-Taking.*
GUY BECKLEY STEARNS, M.D.
New York, New York.
21. *Psychopathology of War.*
JOSEPH A. WEITZ, M.D.
Montpelier, Ohio.
22. *Report of Executive Committee.*
Doctors GRISWOLD, WEITZ, KRAUSS, SHADMAN.

BANQUET

Saturday, October 19, 1918, 7 P.M.

"A Four-Minute Exhortation."

"Brotherly Love."

"Medicine and Surgery."

"The American Association of Clinical Research."

All legally qualified practitioners of medicine and surgery, in good moral and professional standing, may become members of this Association irrespective of their other medical affiliations.

Scientists are welcomed into membership.

Contributors, patrons, donors are welcomed into associate membership.

For applications for membership and other information, address the Permanent Secretary.

JAMES KRAUSS, M.D.,
419 Boylston Street,
Boston, Massachusetts.

SUBMITS TO "COOTIES" TO HELP OUR SOLDIERS

Former Chicago Official Lends His Body to Aid Research of Government Entomologists

There is in Washington a man inconspicuously doing his bit, or his all, for his country by serving as a "host" for body lice, the "cooties" of the war zone. He is coöperating, in a very personal and intimate degree, with entomologists of the United States Department of Agriculture who are striving, under the direction of the Council of Research of the Council of

National Defense, to find preventives and exterminators for the pests that not only annoy and irritate American soldiers, but that spread trench fever and other diseases among them.

This man formerly served the city of Chicago in a public capacity. He has a son with the American Expeditionary Forces in France, and when he volunteered to be a subject in the experimental work of the entomologists he said he was willing to do anything that would help out the boys over there. Valuable data in regard to the control of the "cootie" have been obtained from the parasites living on his body, and moving pictures of them have been taken through a microscope. The pictures are to be magnified and shown at army camps before scientists and army officers engaged in delousing work.

What Scientists Aim to Do

The entomologists, in addition to watching these particular "cooties" and others confined in glass tubes and other places, are testing chemicals to learn their destructive action on lice, their effect on human bodies, and their penetration of clothing. Also, they are coöperating with army officers in testing laundering and delousing processes. They are trying to add to the knowledge of how to repel, kill or drive away the tiny parasites that to many of our soldiers have proved more troublesome than the Germans or their bullets.

One of the scientists of the Bureau of Entomology, Department of Agriculture, also is serving as a host for the parasites, but in a more restricted sense than the Chicago man. His "cooties" are confined under the glass top of a wristlet, much like a wrist watch, and they pass their existence, from the egg stage to the dead adult, on the skin of his arm, and can not move to any other spot. Through the glass cover the entomologist can watch the "cooties" as they emerge from their shells and go through all the stages of their life cycle.

Extensive Governmental efforts to devise ways of overcoming the parasitic evil are under way. Similar efforts have been made and are being made in practically every country that has large armies in the field. The war centered attention of entomologists upon body lice, which previous to the conflict had not received as much attention as scientists believe they deserve.

Not Yet Serious in Camps Here

The "cootie" has not yet appeared in numbers at the camps in this country, but if it should do so, military authorities expect to be ready to deal with it. Men serving for long periods in the trenches, or at other places where bathing and disinfecting facilities are not available, are the principal sufferers. Delousing stations, where thorough bathing, hair clipping and disinfection of clothing can be done, have been established in the war zone.

The moving pictures that are to be part of the campaign against "cooties" show how the louse comes into existence, how it passes into the nymph stage and from that to the adult, and how it propagates its species. They also will show lesions caused by the bites of the parasites, and how to find the eggs and the insects themselves in the folds of clothing. These will be added to films to be taken under the direction of the War Department which will show a delousing station, the devices used, and a company of men ridding themselves of their unwelcome visitors.

To gather and correlate all the scientific knowledge available on the subject, Bureau of Entomology scientists have organized a study class that meets weekly and sends reports of its findings to army officers and others engaged in eradication of parasites.

ARMY ANTHROPOMETRY AND MEDICAL REJECTION STATISTICS

The Prudential Insurance Company of America, in behalf of the Committee on Anthropology of the National Research Council, has recently published an extended discussion of the scientific and practical aspects of army anthropometry and medical rejection statistics, of special interest and value to those particularly concerned with questions involved in the carrying out of the medical provisions and physical requirements under the selective draft.

The publication includes a review of the recruiting statistics of all the principal foreign countries, and the medical causes of rejection in the different armies, with some brief observations on the corresponding rejection statistics of The Prudential. The investigation brings out the wide variation in the physical proportion of recruits and the urgency of more strictly scientific physical standards. The publication is the result of investigations made in behalf of the Committee on Anthropology of the National Research Council, by Dr. Frederick L. Hoffman, Third Vice-President and Statistician of *The Prudential*. The publication is for gratuitous distribution to those who have a scientific and practical interest in the subject-matter of the discussion.

STENOGRAPHERS, TYPEWRITERS, HELP WIN THE WAR

You are urged, as a patriotic duty, to enter the Government service in Washington, D. C., for important war work as stenographers and typewriters.

Women, especially, may thus aid in the nation's great effort. Men also are needed.

Those who have not the required training are encouraged to undergo instruction at once.

Tests are given in 550 cities every Tuesday.

The Government maintains a list of available rooms in private houses in Washington and is erecting residence halls to accommodate thousands.

Full information and application blanks may be obtained from the Secretary of the Local Board of Civil Service Examiners at the post office or customhouse in any important city.

JOHN A. McILHENNY,

President, U. S. Civil Service Commission, Washington, D. C.

PERSONAL AND GENERAL ITEMS

Dr. Francis X. Corr, B.U.S.M., '98, of 622 Freeport Street, Dorchester, Mass., has accepted commission as Captain in the Medical Reserve Corps and has been ordered to active duty at Camp Greene, Charlotte, North Carolina. Dr. Corr has been assigned as Chief Neurologist to Base Hospital Unit 92.

Boston University announces that its medical department has been thoroughly reorganized and henceforth will be non-sectarian in scope and character.

Eminent physicians of the "regular" school will conduct courses in pharmacology and therapeutics, and clinical teaching will be given in the Boston City Hospital and the Robert Bent Brigham Hospital. Homœopathic materia medica will be taught as heretofore, with clinical teaching in the Massachusetts Homœopathic Hospital and allied institutions.

The spirit of the times is to do away with sectarianism in things scientific. In accord with this spirit this school in 1918 announces that its curriculum has been made as broad and inclusive as is consistent with medical science of today.

Drs. J. Emmons Briggs, Forrest G. Martin, and Frederick B. Percy are members of the Massachusetts State Executive Committee of the Volunteer Medical Service Corps.

DeWitt Clifford Wilcox of the United States Naval aviation service, who was recently killed while flying in a seaplane at Pensacola, Fla., was a son of Dr. DeWitt G. Wilcox.

Dr. Frederick W. Colburn announces the removal of his office to 510 Commonwealth Avenue, near Kenmore Station, Boylston Street subway, Boston.

THE NEW ENGLAND MEDICAL GAZETTE

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No. 10

ORIGINAL COMMUNICATIONS

ADDRESS AT THE OPENING OF THE FORTY-SIXTH SESSION OF BOSTON UNIVERSITY SCHOOL OF MEDICINE

J. P. SUTHERLAND, M.D., Dean

Ladies and Gentlemen:

The year 1918, like its numbered and unnumbered predecessors, is unswervingly and relentlessly rolling by towards its finish. Unmoved by the agonies of mankind, month has followed month until we find ourselves face to face with the beginning of a new academic year. October is here, and we have gathered, friends and new acquaintances, who we trust soon will be friends, formally to open the 46th annual session of our School.

Once more it is my duty, and a duty which I always consider a great pleasure and privilege, to represent on this occasion the Faculty of our School and to extend to you, one and all, to individuals as well as to classes, a welcome that is full of sympathy and good-will. The members of the Faculty keenly appreciate the mingled emotions and purposes and ambitions which are yours today, and during the year which is before us you may rest assured of their interest in your welfare, and their abiding friendship.

A long-time member of our Faculty, and one who for years never missed an opening session of our School, is not with us today; and it is fitting that a tribute, even if brief and inadequate, should be paid to his memory at this time, for he was most loyal to the School, was proud of its work and progress, and for a long series of years served it most faithfully. A man of marked individuality, dignified and self-possessed; a natural and effective raconteur; a physician who inspired confidence;

a highly-valued and affectionately-regarded member of the Faculty was lost to the School when late in the last academic year, namely, on June 20, 1918, our colleague Dr. Frank C. Richardson passed from this world with its varied interests, experiences and responsibilities, into the life beyond.

Dr. Richardson graduated from the School in 1879, and later took the medical degree at Hahnemann Hospital and Medical College at Philadelphia. He took post-graduate studies at Harvard, in New York, and in Vienna, and early in his practice devoted himself to diseases of the nervous system, becoming later a neurologist of wide repute.

Dr. Richardson was assistant in the department of nervous diseases as early as 1887; in 1890 he became lecturer at the School, and filled this position for six years. In 1896 he was made Associate Professor, and in 1899 he was appointed Professor of Clinical Neurology, and held this position until his untimely death.

He was a particularly impressive, popular, and successful teacher, and had always great sympathy with his students, whose affectionate confidence he secured and firmly held.

In 1901, Dr. Richardson was made Registrar of the School, and carried the arduous responsibilities of this office until 1914, since which date he continued to serve as a member of the School's Executive Committee, his experience as Registrar fitting him admirably for this position.

It is appropriate to this occasion to take a short retrospective glance and a longer forward look, and from the survey to form a resolution that will act as a steadying influence during the year's work.

Among the many things of our recent past may be mentioned the novelty of our senior year work, which actually began on the third day of June and is now at the beginning of its fourth month. The reason for this innovation is the reason given for many, if not most, of the innovations of the day: namely, the War. The Government being greatly in need of medical officers, and the students being enrolled in the M. E. R. C. and anxious for duty, it was planned, in response to a petition from the seniors, to complete the year's work about February 1, so that they may be ready for their special intensive practical courses in camp before the spring campaign is inaugurated.

A year ago, U. S. Army Base Hospital No. 44, representing the Massachusetts Homœopathic Hospital, was being organized, most of the work, concerning especially the extensive non-professional personnel, falling upon the shoulders of our Professor of Chemistry, whose keen and quick analysis of char-

acter and whose executive ability proved serviceable in securing for the hospital an exceptionally capable and effective group of workers. The unit is now in France and at the work for which its entire membership is so well fitted. It so happens that connected with this Base Hospital No. 44, and with other branches of the Service, are the following members of our Faculty:

<i>Capt.</i> Harold L. Babcock	<i>Major</i> J. Arnold Rockwell
<i>Lieut.</i> David L. Belding	<i>Lieut.</i> Edwin P. Ruggles
<i>Capt.</i> Orville R. Chadwell	<i>Capt.</i> J. Walter Schirmer
<i>Major</i> Thomas E. Chandler	<i>Lieut.</i> Edwin W. Smith
<i>Lieut.</i> Harold E. Diehl	<i>Capt.</i> Wm. K. S. Thomas
<i>Lieut.</i> Sanford B. Hooker	<i>Lieut.</i> Conrad Wesselhoeft
<i>Capt.</i> Wesley T. Lee	<i>Major</i> Wm. F. Wesselhoeft
<i>Capt.</i> Howard Moore	

Dr. Frederick L. Emerson, of our department of obstetrics, is a Captain in the State Guard, and in addition to his routine of public and private duties, is on medical service at the Wm. A. Brooks Camp on Corey Hill, combatting the prevalent epidemic of influenza that is playing such havoc among soldiers, sailors and the civilian population.

Dr. Nathan H. Garrick and Dr. Harry J. Lee have been appointed Contract Surgeons in the S. A. T. C.

It would be inspiring to read a list of the alumni of our School, who are serving their Country on land and sea, in the world-wide fight for freedom and justice and international honorable dealing, now being waged; but the list is too long, for it includes approximately one-sixth of our living male graduates. It is a keen pleasure, however, to be able to announce that so large a number of those who have sat on these benches, worked in our laboratories, attended the clinics and faithfully performed their duties as medical students, have been found loyal and patriotic, when the voice of their Country called them to help save the world.

The absence of so many of our Faculty from active school work throws additional burdens upon those who are left, but these pledge their utmost effort to perform their own special tasks as well as these "additional burdens," so that the year's work may not be seriously impaired.

The past year has been epoch-making in the history of the School; in fact, the most significant since its foundation; for the 46th year upon which we are now entering marks a period of definite change in the aims and policy of the School; a change, the object of which is to broaden and strengthen its field of usefulness to humanity. Pros and cons as to this change have been weighed with the greatest care; impetuous enthusiasm has

been inhibited by moderation and conservatism, and after prolonged deliberation, the Faculty decided to remove the sectarian designation of the School and to introduce into its curriculum courses in physiological or what is known as "Old School" materia medica and therapeutics. This is not the place to give all the reasons advanced in favor of the change; neither is it the place or time to discuss the wisdom of the change. It is the time, however, to assert that honesty of purpose and an earnest desire to advance the cause of internal medicine and increase the real usefulness of the School, to broaden and extend the horizon of its students and to take the lead in throwing off the bonds of prejudice, have governed the Faculty in their action. It is true, there was frank and outspoken opposition to the change, for there are some who fear that the objects for which this School was brought into existence may be overlooked in the desire to be "progressive." Homœopathy, and all it stands for, are still to be taught, however, not as electives, as is the case in some state universities, but as a subject required of all.

The paragraphs in the "Annual Announcement," which present this matter from the standpoint of the University, read as follows:

"The policy of Boston University is to render the greatest possible service to all who seek an education within its portals, by making that education broad as well as thorough. In accord with that policy, its Medical School from its inception has included within its curriculum all the recognized essentials in the science and art of medicine. On the basis of comprehensiveness and thoroughness, the school has earned a classification among medical educational institutions of the first order.

The spirit of the times is to do away with sectarianism in things scientific on the ground that sectarianism and science are 'incompatibles'—that creeds and beliefs are only useful as theories or working hypotheses that may lead to the establishment of true knowledge. In science the familiar aphorism should hold, *in certis unitas; in dubiis libertas; in omnibus caritas*. In accord with this spirit, therefore, and in harmony with the true scientific spirit, the School in 1918 announces that its curriculum has been made as broad and inclusive as is consistent with the medical science of the day, and that hereafter it is non-sectarian in scope and character."

High motives have guided the Faculty in their deliberations and decisions, and this being the case, they look with confidence to the results.

To carry out the new programme calls for the addition of seven names to our Faculty list, and also a considerable extension of our curriculum, but it is expected that students and Faculty will realize that anything that is worth having is worth striving for, and therefore will adapt themselves to the new order and work together harmoniously for the common good. The hardships imposed by the new horarium are of a temporary

character, which experience and further planning will be able to remove.

Re-organization, however, is not confined to our School: it is the most vital thing confronting humanity today. The world is being re-organized, reconstructed, regenerated. It is being tried out in the furnace of relentless war and suffering. It is being purified as by fire. Individual schools and individual lives are of slight significance in comparison with the welfare of Mankind, but each school and each individual is a unit in the great mass, and by just so much the welfare of the unit affects the welfare of the mass.

A few moments might profitably be spent in considering this subject of reconstruction and attempting to draw some lesson from it that may be of use to us during our year's work together. It is unnecessary to refer in detail to the great conflict being waged by practically all the nations of the earth. Everyone acknowledges the stupendous and unprecedented upheaval. Everyone knows that it will come to an end, and we may all be sure that in the end, righteousness and justice will prevail.

It was pointed out by Senator John W. Weeks on September 27, in moving his resolution to create a joint congressional committee on reconstruction, that "While the end of this great conflict may not be in sight, we hope it is, and we know what the end will be. When it does come, it will not give us any time for preparation; indeed in one day the whole world-scene will change. Unless we take advantage of the present to provide for the future, we shall be caught in exactly the same condition as regards peace, as we were when we declared war — unprepared." Thoughtful people, however, in this country and in other parts of the world have been preparing for peace and discussing many of the problems connected with reconstruction.

It is being widely acknowledged that the present civilization is tottering and falling to pieces; that it is about to join its predecessors and become, like them, relics of a past, — monuments of man's ingenuity, intelligence, waywardness, selfishness and folly. When the end of the struggle comes, things simply cannot be as they were before; the idea that they can be, is almost inconceivable.

In the construction of the new civilization some pieces from the old will be retained and many will be discarded. What a considerable portion of Mankind is thinking of in this connection is outlined in an interesting brochure entitled, "*Towards a New World. Being the Reconstruction Programme of the British Labor Party: together with an Introductory Article by Mr. Arthur Henderson, the Leader of the Party.*" Here and

there in the brochure may be found expression of bitter feeling against those who possess much of this world's goods, and an unfraternal attitude in the way of criticism that is suggestive of envy. By just so much is the little book lacking in convincing power. Briefly put, the programme which is to make a new world contains provision for the

- I. *Occupation and employment of the eight million who are in service with the colors or in munition works and other war trades — the slogan to be "Employment for All."*
- II. *Rehousing of the population to the extent, possibly, of a million new cottages.*
- III. *Increasing the number of schools, colleges, technical colleges, etc.*
- IV. *Increasing the number of teachers and clerical and administrative staffs.*
- V. *Building of new roads.*
- VI. *Construction of railways.*
- VII. *Unification and reorganization of railway and canal system.*
- VIII. *Afforestation.*
- IX. *Reclamation of land.*
- X. *Development of ports and harbors.*
- XI. *Opening up of land for small holdings.*
- XII. *If necessary to prevent overstocking of the labor market,*
 - (a) *to lengthen the school-leaving age to 16.*
 - (b) *to increase the number of scholarships and bursaries for secondary and higher education.*
 - (c) *to shorten substantially the hours of labor of all young persons and to permit them to attend technical and other classes.**and finally wherever practicable*
- XIII. *To reduce the hours of adult labor to not more than 48 hours per week, without reduction of the standard rates of wages.*

The Labor Party advocates the full and genuine adoption of the principle of democracy and insists on the complete removal of all war-time restrictions, on freedom of speech, freedom of publication, freedom of travel, and freedom of choice of place of residence and kind of employment, the day after peace is declared.

The party stands for complete adult suffrage, for absolutely equal rights for both sexes, for the complete abolition of the House of Lords, for the progressive elimination of the private capitalist from the control of industry, and for a "genuinely scientific reorganization" (a popular phrase) of the nation's industry on the basis of common ownership, and equitable shar-

ing among all who participate in any capacity, and only among those.

The party stands for the common or public ownership of the nation's lands, railways, mines and electrical power, canals, harbors, roads, posts and telegraphs, the great lines of steamers, etc. The importation of wheat, wool, metals and other commodities and the control of woolen, leather, clothing, milling, baking, butchering and other industries are all to be governmental.

Taxation and national finance are also included in the programme on the general ground of "the surplus for the common good." A few other matters are dealt with in the programme, and a short final section pays a tribute to science (political and social science especially) and concludes with the aphorism, "If the law is the mother of freedom, science, to the Labor Party, must be the parent of law."

Here we have a clear-cut statement of the plans and aspirations of one of the most powerful parties in Great Britain. The object seems definite and the plan coherent. What is actually being done in other parts of the world, in our own country, for instance? There may be no party here that is planning for the future, but the Government already has done and is doing things many of which doubtless will become permanent institutions. In a country governed "by the people, for the people," very little is heard today of state rights doctrine: everything is for the central government which has so recently assumed the control of many essential industries, the manufacture of ordnance, ammunition, woolen material, clothing, the mining and distribution of coal, the control of the railroads, the postal service, the telegraph, the building of ships, the housing of workmen on a large scale, the fixation of prices of various commodities, the control of food supplies, the improvement of ports and harbors and the owning and building of a very extensive canal system, and finally has taken over the advanced technical and professional educational institutions. More than this. If we take the words of President Wilson, uttered in New York at the opening of the Fourth Liberty Loan Campaign, Friday, September 27 — "The common will of Mankind has been substituted for the particular purposes of individual states. Individual statesmen may have started the conflict, but neither they nor their opponents can stop it as they please. *It has become a peoples' war*, and therefore as one of the terms of peace, all international agreements and treaties of every kind must be made known in their entirety to the rest of the world." Verily, Bellamy's "Looking Backward" and Jules Verne's "Twenty Thousand Leagues Under the Sea," looked at a genera-

tion ago as wild, fantastic dreams, are likely to come true in this, our day and generation.

The one point, however, in all this planning and reconstruction to which I would draw your attention, is the worldly and material and temporal character of the reforms. The moral, the spiritual, the eternal, the truly essential things do not seem to be considered. This reconstruction, then, may be like building a house upon the sand, the fate of which is sealed from the beginning. Unless the new civilization talks less about capital and classes, and labor rights, and secures a foundation upon the rock of justice and charity to all, its duration will not have the desired stability and permanency. Many of the plans for the future state of the world remind one of the saying, "There are thousands hacking at the branches, to one striking at the roots." It is the effect and not the cause that is aimed at and treated. This is true of many changes and reorganizations in things great and small; a few branches are lopped off here and there, but the tree remains essentially the same.

The last paragraph in the British Labor Party's programme speaks impressively of science, but if we were to ask the Labor Party or, in fact, the average individual, what and how much we really know, we should in all probability arrive at the conclusion that humanity, even in this somewhat boastful twentieth century, knows comparatively few things, especially in regard to the essential things of life. We need not adopt as the definition of essential or important things, the phrase whose origin I am not sure of, which reads "That only is important which is eternal." It would be a good idea, nevertheless, if Mankind were to adopt some such high standard as this definition of "essential."

If we take a broad outlook upon humanity, what do we find in regard to the possession of knowledge? As was pointed out by Prof. J. B. Baillie¹ of Aberdeen University, the possession of science (by which is meant chiefly the so-called "Natural Sciences"), is confined to a small portion of the earth's inhabitants. The teeming millions living in Africa, in Asia, and even the majority of the inhabitants of the more favored "civilized" areas of the earth, know comparatively little. If we look at our own profession, we find the amount of knowledge limited to the things revealed to the senses. We know a great deal of Anatomy, Histology, Embryology, Bacteriology, etc., just as the ordinarily educated person knows much of Geology, Astronomy, Botany, etc., but in the medical profession, the family physician many times has to stand by and watch his

¹Hibbert Journal, April 1917, page 362.

patients steadily slip down the path that leads to what is called death, without being in any way able to stem the fatal tide.

Along the lines of Chemistry, Physics, Mechanics, etc., humanity knows increasingly more and more, and it is along these lines especially that humanity has shown its cleverness and ingenuity; and this knowledge and cleverness and ingenuity have not by any means been used wholly for the welfare and prosperity and happiness and usefulness of Mankind. What is needed by Mankind, in medicine and in general life, evidently is not the old paths which have led to the present condition of the world and civilization, but new ones which will lead to fields of greater knowledge, usefulness and happiness.

In this connection it is suggestive to read in a recent advertisement of the "Federated Jewish Charities" in regard to new schools, kindergartens, training schools, etc., that there are 3,800 children in regular attendance in these schools—being taught to "deal justly, to love mercy, and to walk humbly with God." "These boys and girls will grow up good men and women and loyal American citizens."

Let us for a moment look at this subject of reconstruction, and of the profound ignorance of humanity as a whole, from possibly a novel standpoint. Let us assume that the phrases "non-adult races," "undeveloped races," "the childhood of the race," and those of a similar character, mean something; that they signify what all thinking people must acknowledge to be true, *viz.*, that our race itself is simply in process of development and has not yet progressed very far along the road. Can there be any justification for the belief that Man has reached his full development, that he has plumbed the depths of knowledge and scaled the heights of wisdom? An ordinary survey of the peoples of the earth and of the fruits of their lives (for "by their fruit shall ye know them"), and an analysis of the present-day civilization and its fruits will justify one in maintaining the contrary idea.

It may be helpful to assume, for argument's sake if no more, that the life of Mankind is typified in the life of the individual: at all events a certain parallel can be drawn. The individual human being comes into this world an absolutely helpless, ignorant entity. He is innocent of evil thoughts or actions, but it is the innocence of ignorance. He may be sweet and attractive, but it is the sweetness of helplessness. He is not conscious of anything, his actions being reflex. Gradually his sense organs begin to function: he sees, he hears, he feels things, but it takes some time for him to realize that the moon is not within his reach. After a while he begins, as a result of his experiences, to have simple ideas and soon awkwardly expresses his emotions

and ideas by gestures and noises which eventuate in speech. His language depends wholly upon his environment. As he grows in stature, his mental ability expands and he becomes more or less receptive of teaching, by parents or others. And so he passes through infancy and childhood, the recipient of knowledge imparted to him by family or teachers. During his childhood and youth he may be wayward, unruly, wilful, brutal: he may prefer fishing or playing to school. At all events, he is very apt to prefer his own way to that of his father's or teachers'. Later, he acquires some power of reasoning, and now his development is more and more rapid, until early adult age is reached, when he not infrequently becomes self-satisfied, thinks his knowledge is very creditable to himself and that he has rather distanced his parents in wisdom. There is no need of following through the immortal bard's "seven ages." Enough has been said perhaps for our parallel column, and enough to bring us up to the present age of mankind.

There is no available testimony to show that Mankind's history is very different from the development of the individual. Our earliest progenitors certainly did not possess profound wisdom. They were innocent, but with the innocence of ignorance. Very slowly, as a result of laborious effort, some knowledge of material things was acquired. The powers of observation and imitation led on to the formation of crude ideas. The desires, the emotions, the wilfulness seen in the individual naturally showed itself in the race-mass. Language slowly evolved through signs, gestures and grunts to the spoken and finally the written word. In the course of time, knowledge of physical things accumulated and was handed down from generation to generation, and as time passed the race or portions of Mankind woke to the power of reasoning. As the result of an acquired momentum, the more favored nations pressed on rapidly until, in our own day, the earth and the surrounding universe has been quite thoroughly explored, and Man feels that he is the "lord of creation," and that his knowledge is due to himself; and it is this self-sufficiency that has led Man into trouble. His self-acquired knowledge is of physical or material or temporal things, not of the truly important, essential, spiritual, eternal things.

The more advanced of humanity's legions know that the body in which Man lives is not the individual himself. That is being learned now and through the experiences of this greatest of wars, by larger and increasingly larger numbers of people.

In one point of development, Mankind has missed a vital thing. The child has had his father to depend on for guidance, and his teachers have been to him his fount of wisdom. Man-

kind, on the other hand, has depended on itself. It has preferred to have its own way — and with direful results. Mankind has not been without guidance and proffered instruction, but to these he has for ages turned a deaf ear. For instance, approximately two thousand eight hundred years ago, the following utterance was given to Mankind:

1. " Cry aloud, spare not,
Lift up thy voice like a trumpet,
And shew my people their transgression,
And the house of Jacob their sins.
2. Yet they seek me daily,
And delight to know my ways,
As a nation that did righteousness,
And forsook not the ordinance of their God:
They ask of me the ordinances of justice;
They take delight in approaching to God.
3. Wherefore have we fasted, say they, and thou seest not?
Wherefore have we afflicted our soul, and thou takest no knowledge?
Behold, in the day of your fast ye find pleasure,
And exact all your labours.
4. Behold, ye fast for strife and debate,
And to smite with the fist of wickedness:
Ye shall not fast as ye do this day,
5. To make your voice to be heard on high.
Is it such a fast that I have chosen?
A day for a man to afflict his soul?
Is it to bow down his head as a bulrush,
And to spread sackcloth and ashes under him?
Wilt thou call this a fast,
And an acceptable day to the Lord?
6. Is not this the fast that I have chosen?
To loose the bands of wickedness,
To undo the heavy burdens,
And to let the oppressed go free,
And that ye break every yoke?
7. Is it not to deal thy bread to the hungry,
And that thou bring the poor that are cast out to thy house?
When thou seest the naked, that thou cover him;
And that thou hide not thyself from thine own flesh?
8. Then shall thy light break forth as the morning,
And thine health shall spring forth speedily:
And thy righteousness shall go before thee.
9. If thou take away from the midst of thee the yoke,
The putting forth of the finger, and speaking vanity;
10. And if thou draw out thy soul to the hungry,
And satisfy the afflicted soul;
Then shall thy light rise in obscurity,
And thy darkness be as the noonday:
11. And the Lord shall guide thee continually,
And satisfy thy soul in drought,
And make fat thy bones:
And thou shalt be like a watered garden,
And like a spring of water, whose waters fail not."

—Isaiah lviii.

Is not this Scripture as applicable to Mankind today as it was twenty-eight hundred years ago? Are not the suggestions contained therein a grand foundation for the re-organization or

reconstruction of an individual, a nation, the world itself? Is not the teaching here given worthy of incorporation into any programme of education or reconstruction? Would it not help to remove the ignorance and evil which now brood over the face of the earth?

Adoption of the programme outlined by Isaiah would surely bring to Mankind the freedom and justice and righteousness for which this war is being waged: for which so many of the "flower of mankind" are giving their lives. It would secure lasting liberty, freedom of the seas, free speech, free press, free religion, free trade, the abrogation of copyright and patent laws, the removal of slums and poverty and many social evils, and a betterment of mankind in general; and most certainly it would prove a more efficient prophylactic against most moral and physical diseases than vaccines, the latest medical invention, have proved themselves to be.

Universal brotherhood is on its way with rapid strides, and it will have its effects on all departments of life—even medicine will feel it. Ignorance is being dissipated and in direct ratio with the adoption of the highest teaching and ideals. The old English adage, "Love your neighbor, but pull not down your hedge," will be replaced by Kipling's fine lines:

"Oh, East is East, and West is West, and never the twain shall meet,
Till Earth and Sky stand presently at God's great Judgment Seat:
But there is neither East nor West, Border, nor Breed, nor Birth,
When two strong men stand face to face, tho' they come from the ends of the earth!"

Medicine, itself, needs reconstruction, and on a better foundation than it at present possesses. Medicine needs to get out from among the branches, part of the time at least, and strike at the roots of disease and suffering, more diligently than ever yet in its history. Medicine needs more of the spirit of Brotherhood, not for the sake of expediency, but for the advancement of true charity. These are objects worth your striving for, and with youth and vigor and enthusiasm and advantages on your side, you ought to go far towards attaining them.

Doubtless it would help us all to remember charitably that Mankind is still much undeveloped, certainly as far as the higher and more important things of life are concerned, but that the light of day is slowly dawning, and that if Man will accept it, there is sufficient guidance and instruction within his easy reach.

Many of these thoughts are beautifully expressed by a little known, but true, poet in these exquisite lines:

What Time Is It? ¹

What time is it by the Almighty's clock,
Whose pendulum, with sweep deliberate,
Links age to age?

Is midnight on its way,
Or morning?

How impenetrably deep
The darkness!

Time is reckoned from the hour
When Chaos crystallized. Creation's count
Commenced with evening; it may be that man's
Long-lasting day began at twilight's fall
And never yet saw sunrise.

Legend says
There was a golden age, with all the world
Contentedly at peace; when lust of rule
And carnage were unknown; was that full day
Or was it moonlit evening?

Faith persuades
That all the years oblivion has engulfed
Were only Time's beginning hours; that this
Dense darkness is not that of deepening night,
But shrouds the hour that beckons to the dawn.

How long must Night enduring baffle hope?
What time is it? Heaven speed the break of Day!

NEPHRITIC INFECTION IN CHILDREN *

STEPHEN H. BLODGETT, M. D., Boston, Mass.

At the outset I will state that from my experience I believe every case of nephritis in children to be due to infection; not, however, by one specific bacterium, but different cases are caused by different germs.

Every case of acute infectious disease is accompanied in its early stage by a considerable degree of nephritis. Perhaps the organism most commonly at fault is the colon bacillus, but the pneumococcus, the bacillus tuberculosis and the influenza bacillus may all cause nephritis; and in addition to these common ones, there are undoubtedly many others. The most common avenues of entrance of the bacteria are the tonsils, but the mucous membrane of the nose may also serve as a portal of entry, and abscesses about the teeth are frequently the origin of nephritis in children.

Cases of nephritis in children may be divided into acute or chronic. In the acute cases there is chill, rise in temperature, and dark, smoky urine. The patient may have digestive disturbances, the attack resembling very much an attack of *la grippe* or of pneumonia (and it must be remembered that in

¹ By W. C. Rodmann. "New Church Messenger," May 1, 1918. P. 348.

* Read before the Boston District of the Massachusetts Homœopathic Medical Society, May, 1918.

cases of pneumonia in children the pulmonary physical signs frequently do not appear in the early part of the disease). There will only be a small amount of urine of a high or dark color, rather high specific gravity, a large amount of albumen with a sediment containing tubule cells, more or less normal and abnormal blood, and hyaline, epithelial and granular casts.

The evidences of chronic or low grade nephritis are usually discovered when the child is brought by the parents for an examination because of poor appetite, lassitude and at times headache. The examination of the urine shows no abnormalities except a slight trace of albumen and usually some granular casts in the sediment.

In many of these cases, especially in the chronic condition, the treatment, to be efficacious, must be directed at the cause. Therefore, given a case showing low grade nephritis in a child, we must find the cause before we treat the nephritis.

Upon the possibility or impossibility of removing the cause must depend our answer to the question as to what should be the treatment and prognosis of the case. To illustrate this point, let me give the history of two cases, each typical in its own way of many I have seen during my service at the Massachusetts Homœopathic Hospital.

Case I. Girl, aged 9 years; family history negative; previous health good; had mumps, measles, whooping cough and German measles over six years ago. About 6 months ago she felt "run down," and complained of occasional dull frontal headache and palpitation; — this latter was said by the physician called in to be due to "run down" condition. Two months ago (in August) she had diarrhœa with green stools. Other members of the family had similar trouble. Later it was noticed that she had rather frequent urination. She was brought in for examination on account of her lassitude and "run down" condition.

At the time of her entrance to the hospital she complained of feeling tired and listless, and of frequent urinations, passing urine three times at night and five times in the day. The urine contained no blood.

Heart, lungs, and gastro-intestinal tract were negative. Blood examination showed: Hæmaglobin 100%; leukocytes 15,400; lymphocytes 43%; polymorphonuclear neutrophils 57%.

Analyses of the Urine

	On Entrance	After a week of rest in bed and a very simple diet.
24 hour amount	296 c.c.	680 c.c.
Color	Slightly pale	Normal
Reaction		Alkaline
Specific gravity	1.018	1.018
Total solids	12 gms.	29 gms.
Urea	6.5 gms.	12 gms.
Chlorine	3 gms.	
Phos. acid	.3 gms.	
Albumen	Slight trace	
Sugar	Absent	Absent
Acetone	Absent	Absent
Sediment	Considerable pus Few renal cells Debris	Amorphous phosphates Few renal cells Few granular casts.

Feeling that this case was due to an infection from a primary focus in some other part of the system, we asked that she be examined by a throat specialist and also that the teeth be examined at the Dental Department. The examination of her nose and throat showed slight enlargement of the tonsils, and the report from this department contained the comment, "her tonsils may be the cause of the nephritic infection, but it is doubtful." The nose was found negative.

An examination of her teeth showed abscesses at the roots of many of them. It was deemed advisable to place her under the care of the dental surgeons, allowing her to return to school and to her ordinary diet without giving any medicine. Her teeth were treated at the Dental Department, and within two months both her renal condition and her general physical health began to improve. I saw her about a week ago, eight months after her entrance to the hospital, and she looked and felt perfectly well. Urinalysis showed a normal urine and the Throat Department reported that the slight irritation in the tonsils found at the first examination had entirely disappeared. It seems very reasonable to suppose that the throat and kidney conditions were both secondary to the infection in her teeth, because both of them very promptly improved without direct treatment as soon as her teeth were put in proper condition and the source of infection removed.

Case II. A child, aged 9 years, with a negative family history, had always had good health until about six weeks ago, when she was taken with a sudden chill followed by fever, frequent urination, and some smarting when passing urine. She was seen and treated by a physician and improved sufficiently to be up and about. A few days later there was another similar

attack, also followed by improvement. She had one or two more attacks and then was admitted to the hospital. At this time she complained of frequent urination and some lassitude. She was well nourished; the heart and lungs were negative; the gastro-intestinal tract was negative except that the tongue was slightly coated; appetite was fair; there was no swelling of face, hands or ankles; throat and nose were negative.

Blood examination showed: Hæmoglobin 85%; leukocytes 7,000; lymphocytes 52%; polymorphonuclear neutrophils 47%.

Analyses of the Urine

	Several days before admittance to the hospital	On admittance	Two of the subsequent daily analyses.	
24 hour amount	750 c.c.	532 c.c.	414 c.c.	621 c.c.
Color	Normal	Normal	Normal	Slightly pale
Reaction	Acid	Acid	Acid	Acid
Specific gravity	1.014	1.014	1.017	1.013
Total solids	24 gms.	17 gms.	16 gms.	19 gms.
Urea	15 gms.	13 gms.	11 gms.	10 gms.
Albumen		Trace	Slight trace	Slight trace
Sugar	Absent	Absent		
Acetone	Absent	Absent		
Sediment	Few renal cells; few pelvic cells; considerable pus; mucus	Renal cells; pelvic cells; considerable pus; few red blood disks	Few renal cells; few pelvic cells; considerable pus; considerable mucus	Considerable pus Little blood

The patient was kept in bed during her entire stay in the hospital, so as to preclude any chance of any rise of temperature in the afternoon being due to playing about; and she was given a bland diet containing no meat or fish, and the only egg allowed was what might be used in making ice-cream or other dessert. Her temperature was taken daily every two hours during the afternoon and gave the following readings on successive days:

7 A.M.	98.4	99.2	99.6	99.4	98.2	98.6	98.8	98	98.8	98	98.6
2 P.M.	99	98.4	100.8	98.8	98.4	98.4	99.2	97.4	98.2	99	98
4 P.M.	99.4	98.4	100.8	99.6	99.2	98	99	98.6	99.2	98	98.6
6 P.M.	100	99.4	101.4	98.8	98.4	99	99	99	99.2	98	98.6
8 P.M.	99.8	98.2	101.8	98.6	98	99	97.8	98.2	98.8	97.4	98.6

Considering the temperature and the findings from the analyses of the urine, it was felt that this case of nephritis was mostly confined to the pelvis of the kidney and was due to the tuberculosis bacillus. It was also felt, because of the tendency of the temperature to become normal after protracted rest in bed; that the prognosis was good if the child could be placed in suitable hygienic surroundings and given proper food.

Here I might call attention to a peculiarity in the uranalyses of this case, and I have noticed this also in many other cases of renal tuberculosis: *e.g.*, the very large relative output of urea as compared with the excretion of total solids, and this excessive output with a diet not particularly rich in nitrogen. This increased urea must be derived partly from the patient's own muscular tissue and accounts therefore for the loss of weight; and perhaps this explains why the treatment found most successful in tuberculosis consists in furnishing to the patient three or four times as much nitrogenous food as could be used by a normal active person.

419 Boylston Street.

REPORT OF A CASE OF PROGRESSIVE BULBAR PARALYSIS

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HISTORY AND SYMPTOMS

The man whose likeness is shown herewith came to the clinic for diseases of the nervous system at the Out-Patient Department



of the Massachusetts Homœopathic Hospital, on a recent date, for relief from a condition characterized chiefly by difficulty in articula-

tion and swallowing. These symptoms had appeared very gradually about one and one half years ago, and have increased more or less steadily to a degree preventing articulate speech and causing great difficulty in swallowing food or drink. The photograph shows the half-open, weak-lipped, drooling mouth, which is a characteristic feature. It shows also atrophy of the interossei and the muscles of the thumb lying parallel with the metacarpals. The patient's lips are thin and flabby. The tongue lies flaccid and almost motionless. To voluntary effort it responds very slightly, but it is the seat of constant, fine, squirming, fibrillary tremors. Its mucous covering, seemingly too abundant, lies loose and wrinkled. Sensory disturbances are absent. Common sensations, smell, taste, vision, and hearing are all within normal limits. The pupils are equal, regular, active to light and in convergence. The motor apparatus of the eye-balls is likewise normal.

PATHOLOGY

The condition thus sharply delineated in this patient is progressive bulbar paralysis. The pathology is that of gradual progressive degeneration of the motor nuclei of the pons and medulla oblongata. That the anterior horns of the cervical cord are affected in a similar fashion is shown clearly by the progressive weakness and wasting of the small muscles of both hands. In this case the degeneration of the motor nuclei began in the medulla and is spreading down to the cervical cord. In many cases the process begins in the cervical cord and ascends to the motor nuclei of the bulb. In some cases of primary bulbar disease the process is fatal before the involvement of the anterior horns of the cervical cord shows itself clinically.

DIFFERENTIAL DIAGNOSIS

This picture of progressive failure of the muscular apparatus innervated by the motor nuclei of the medulla and horns is often very definite and clear-cut, but one may easily go astray in the interpretation of symptoms. Nerve centers and tracts necessary to life itself are here represented in a relatively small area, and accordingly vascular accidents are usually promptly fatal. Further, they are of rapid onset, and, if not fatal, often are regressive, are seldom or never bilaterally symmetrical, and very rarely or never involve merely the motor nuclei and leave the whole sensory apparatus intact.

Bilateral interruption of the motor paths between the cerebrum and the bulbar nuclei causes a symptom complex, that of pseudo-bulbar palsy, which may greatly simulate true progressive bulbar paralysis, but the history in pseudo-bulbar palsy reveals a story of repeated cerebral insults from vascular accidents, and since the

lesions in the motor paths in this condition are supra-nuclear, the muscles of the lips, tongue, and palate, etc., do not waste and show no reaction of degeneration and no fibrillary twitching.

The difficulties in the delineation of progressive bulbar palsy are only hinted at here. One must remember particularly in this connection neuritis of the bulbar nerves and so-called functional bulbar palsy or myasthenia gravis. The writer remembers very well a young unmarried woman brought to the clinic because of difficulty in mastication, swallowing and talking. Her symptoms were not extremely troublesome except with fatigue, which, however, was easily induced. In the morning she was apparently a fairly normal individual who could talk and eat readily; but as the day wore on, continued talking became difficult and eventually impossible for the moment. Similarly, fatigue showed promptly in masticating and swallowing food. This undue readiness for fatigue, increasing to the point of incapacity, extended in this woman to the musculature of the eyes, face, neck, and upper extremities. Hers was a case of functional bulbar palsy.

PROGNOSIS

The patient here reported is in a very serious condition. The inability to take food sufficiently shows itself already in failing nutrition, and further, the patient is liable at any time to inhalation pneumonia.

496 Commonwealth Ave.

CLINICAL DEPARTMENT

DIAGNOSTIC VALUE OF THE LEUKOCYTIC BLOOD PICTURE IN ACUTE ABDOMINAL AND PELVIC INFLAMMATIONS

HELMUTH ULRICH, M.D., Boston, Mass.

It has long been recognized that a leukocyte count is an important aid in the differential diagnosis of acute febrile abdominal conditions. A high total count is presumptive evidence of pyogenic infection, and differentiates appendicitis and salpingitis from typhoid fever and certain other abdominal conditions. Such a leukocytosis, however, is not in itself an indication for surgical operation, except for those who consider the mere diagnosis of appendicitis sufficient cause for such procedure. An increased percentage of neutrophils that is out of proportion to the total increase of leukocytes, on the contrary, is a more ominous sign and is by many accepted as an indication for immediate operative interference. That such an interpretation is not always permissible, however, is shown by the following case.

Mrs. K., age 35, was suddenly taken with pain in the lower abdomen, and with nausea and slight vomiting. Her history revealed that she had no children, but had had five miscarriages at about the third month of pregnancy. She was married twice. Her second husband acknowledges having had gonorrhœa about 30 years ago, and rarely has a very slight urethral discharge. No evidence of syphilis was elicited. The patient had had two or three attacks similar to the present one, which lasted but a few days and were diagnosed peritonitis.

Physical examination revealed a moderately obese woman, with extreme tenderness in the suprapubic and both iliac regions of the abdomen. Vaginal examination could not be thorough because of extreme sensitiveness in the vaginal vault. There was no apparent vaginal discharge. Temperature was 102.4. Blood examination showed a leukocytosis of 20,000 per cmm. and a neutrophil percentage of 90. The diagnosis of salpingitis seemed warranted. On the third day the vaginal tenderness had subsided sufficiently to allow introduction of a speculum. There was a small amount of purulent discharge in the vaginal vault. Microscopic examination showed it to contain many colon bacilli and very few leukocytes. Tenderness was fairly marked in the right vaginal fornix, where a small swelling could be palpated. Under expectant treatment recovery was rapid. Wassermann tests done later on both the patient and her husband were negative.

Because of the history of similar previous attacks and of gonorrhœa in the husband, it was thought that the *B. coli* infection was secondary and that there existed a chronic gonorrhœal salpingitis.

Aside from the question whether removal of the Fallopian tubes should be attempted after subsidence of acute symptoms, it was necessary to decide at the beginning whether or not immediate operation should be undertaken because of the unfavorable blood picture. In view of the writer's previous experience with blood counts done very early in acute infections (reported in this journal¹), it was decided to delay operation. The outcome of the case showed the wisdom of this decision.

Regarding the prognostic value of the relation between the total leukocyte increase and the increase in neutrophil percentage it may be explained that the former is considered an expression of the patient's powers of resistance, and the latter of the infection's virulence. If the neutrophil percentage rises more than the total leukocyte count, then the virulence of the invading bacteria is probably greater than the patient's resistance, and the prognosis, therefore, becomes unfavorable. If the total number of leukocytes, however, is large and the neutrophil percentage remains relatively low, then the patient's resistance is greater than the virulence of the infection, and the prognosis is good.

In the article referred to above, however, it was shown that a simple, short-lived inflammation of the upper respiratory tract could cause a marked though transitory relative excess of neutrophils, out of all proportion to the total leukocyte count, and also that such a blood picture might follow ether anæsthesia or intravenous salvarsan infusion.

It is necessary, therefore, to revise our views concerning the prognostic value of such blood findings, and we must conclude

¹Ulrich, H. *The value of differential leukocyte counts, and a new chart for recording the same.* New Eng. Med. Gaz., 1913, xlviii, 113.

that a relatively excessive neutrophil percentage, even as high as 90 per cent., within the first twenty-four hours after the onset of the disease, does not necessarily indicate high virulence of the infection, nor does it preclude a favorable prognosis. But it is probable that such an initial rise of the neutrophils is but transitory in favorable cases, and that its persistence must be regarded as decidedly unfavorable.

EDITORIAL

BOOKS for review, exchanges and contributions — the latter to be contributed to the *GAZETTE* only and preferably to be typewritten — subscriptions and all communications relating to advertising and other business should be sent to THE NEW ENGLAND MEDICAL GAZETTE, 80 East Concord Street, Boston. Make checks payable to THE NEW ENGLAND MEDICAL GAZETTE.

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“MODERN CÆSAREAN SECTION”

In an article bearing this title, Dr. Nathaniel W. Emerson presented in the September *GAZETTE* eighty-nine cases of pregnancy that were subjected to abdominal delivery for various reasons. The striking feature of this series of cases is the low maternal death rate. Only two mothers out of the eighty-nine succumbed as a result of the operation, a mortality percentage of 2.25. The series, although not very large, is yet sufficiently extensive to make the results significant. We are not aware of another published series showing equally good results. The maternal mortality previously reported has ranged from 25.79 per cent to 16 per cent in Cæsarean section done for eclampsia, and about 5 to 10 per cent in placenta prævia.

The reason for this decided difference in results is unquestionably the difference in the time chosen for doing the operation. If patients are allowed to progress until the operation becomes a last resort, it is but natural that not only the actual but also the relative mortality rate should increase; whereas, if abdominal section is undertaken reasonably early, before the patient is *in extremis*, the chances of a fatal issue are correspondingly reduced.

The indications for Cæsarean section have gradually increased in number, so that, as Dr. Emerson points out, “the time has passed for high forceps operation under any circumstances other than very exceptional ones,” and that “all cases where high forceps have been indicated in the past would, except in very exceptional circumstances, be relegated to the class requiring Cæsarean section.”

It cannot be denied, however, that there is danger of deciding too readily upon this operation, as is illustrated by the following case:

Mrs. A. E. F., aged 33, 6-para, was due to be confined on November 18. On October 28, about three weeks before expected labor, she had a slight hæmorrhage which was followed for two days by blood-tinged mucous vaginal discharge. Advice was sought from two prominent obstetricians, both of whom, without seeing the case, thought that placenta prævia was the probable causative condition. The patient's immediate removal to a hospital for the purpose of doing Cæsarean section was advised by one of them.

Upon further questioning, the patient gave a history of similar bleeding immediately prior to a previous normal confinement, and she stated also that her mother had always had a slight hæmorrhage before going into labor. In view of these facts it was decided to adopt an expectant attitude.

There was a little more bloody discharge on November 13, followed in a few hours by labor pains and a normal and uneventful delivery. The bleeding was probably due to slight separation of a normally implanted placenta.

Whether or not the mere diagnosis of placenta prævia is sufficient indication for doing Cæsarean section is a matter to be decided only after further study and comparison of results obtained. It seems that at present the tendency is to operate in more and more of such cases; but Brodhead¹ believes "that probably in a large percentage of cases of eclampsia and placenta prævia, abdominal section is unwarranted and unjustifiable." Further refinement in technic and early selection of cases, however, may bring about results like those attained by Dr. Emerson, which would rob these and other dreaded complications of pregnancy of a large part of their deadliness and would result in a more frequent resort to Cæsarean section for their relief.

NO MORE PHYSICIANS TO BE COMMISSIONED IN THE MEDICAL CORPS

At ten o'clock on the morning of November 11th, the War Department discontinued the commissioning of physicians in the Medical Corps.

This condition, in all probability, is permanent, and no further consideration will be given applicants for a commission in the Medical Corps until further notice.

CORRESPONDENCE

To the Editor:

The American Red Cross has been asked by the medical authorities of the Government to make a survey which will include a registration of all women of the country who have had training or experience in nursing. Previous surveys about the nursing profession have been made, but they were not national in scope and the information secured from them is

¹New York State Jour. of Med., 1918, xviii, 389.

inadequate for the present and future needs of the Government.

The purpose of the survey is to determine how many graduate nurses can be released for military service without detriment to the needs of the civilian population. There are many women in the country with some training and experience in nursing who can be used in an emergency under proper supervision. This survey will reveal how many semi-trained women are available for this purpose.

The Boston Metropolitan Chapter of the Red Cross asks your coöperation in making this survey a success. Much work has already been done, but we need your assistance in locating nurses who are not registered.

Will you, therefore, be good enough to send me, as soon as possible, the names and addresses of the women known to you who are trained nurses, or who can be depended upon to do intelligent nursing when the need arises. The questionnaire calls for information about graduate nurses, pupil nurses, ungraduated nurses, trained attendants, practical nurses, etc., and filling out the questionnaire is not a pledge of service.

Your interest and coöperation in helping the Red Cross to accomplish successfully its very important task will be deeply appreciated.

Faithfully yours,

(Miss) GUENN COOKE

Executive Secretary, Nursing Survey, Boston Metropolitan Chapter.

To the Editor:

I have been so busy fighting "Spanish Flu" that I have found time for nothing else for several weeks. I want to tell you my experience with the disease, for I am proud of my record; proud of what homœopathy was able to do out here in this small city in South Dakota.

In all, I treated 188 cases of Spanish Influenza. Of the above number I treated 169 cases from the initial fever and 19 cases who had been unable to get a physician during the early stage, or who thought they could carry it through alone and called me only when the disease got the best of them. Of the 169 initial cases I lost not one, neither did I have a relapse; but I am sorry to say that one lost his mind, which I hope is only temporary. All of the others recovered without relapse. Of the 19 late cases all but three recovered. All of the three were pneumonic. One lived but eight hours after pneumonia set in; one, two days; the third had endocarditis which ended the scene five days after a relapse.

To recapitulate: I treated 188 cases and had three deaths. Among these 188 cases I had every variety of "Flu" and required

a variety of remedies. I commenced every case with Gelsemium and Bryonia, which seemed to rob the case of its tendency toward pneumonia. Other remedies I used in my cases were Phosphorus, Tartar Emetic, Hepar sulphur and Pulsatilla. In not one case did I find it necessary to use any of the old-school remedies. In one or two cases I found it necessary to resort to Passiflora and Cratægus.

Yours truly,

ARTHUR B. HAWES, M.D.,

Bridgewater, South Dakota.

REVIEWS

HOMŒOPATHIC PERIODICAL LITERATURE

The Journal of The American Institute of Homœopathy, November, 1918

1. *The relation of a homœopathic research institute to our homœopathic colleges.* 481. Burrett, C. A.
2. *Calcarea fluorica — its use in shell-shock.* 489. Baker, W. F.
3. *Radium in dermatology.* 498. Collins, C. A.
4. *Is the increasing death rate from the "degenerative" diseases imaginary?* 502. Rittenhouse, E. E.
5. *The future of the medical profession.* 506. Carmichael, T. H.
6. *Inguinal hernia; operation with special reference to the use of local anesthesia.* 515. Kelly, F. A.
7. *The undetected gonorrhœas.* 519. Wieland, F.
8. *Pre- and post-natal care.* 525. Motto, M. P.
9. *Internal secretions and enzymes — their interrelation and interdependence — their value and application in modern therapy.* 531. McNulty, J. J.
10. *Some ear-nose-throat remedies, and how I use them.* 541. Rowland, W. D.
11. *The care of the eyes of children.* 546. Gowens, H. L.

The Homœopathic World, November, 1918

12. *Homœopathy: one of the allies in the great war against the enemy of mankind, disease.* 443. Eccles.
13. *What do you really know about healing the sick?* 457. Jones, E. E.
14. *Lachesis.* 464.

The Hahnemannian Monthly, September, 1918

15. *Blood transfusion by the sodium citrate method.* 518. Sappington, S. W.

16. *Normal isohæmagglutinins: their occurrence in human blood and their relation to blood transfusion.* 536. Sappington, S. W., and Seitz, J. S.

17. *Pennsylvania's program in controlling venereal diseases.* 545. Laird, J. L.

18. *A construction program of sex control.* 550. Zahniser, C. R.

The British Homœopathic Journal, October, 1918

19. *Ignatia.* 279. Wheeler, C. E.

GENERAL MEDICINE

Military aspect of status lymphaticus. Ewing, J. *Jour. Am. Med. Ass.*, 1918, *lxxi*, 1525.

Status lymphaticus is characterized by a feminine type of bodily conformation in the male, absence of axillary and deficiency of pubic hair, general delicacy of integument, a tendency toward abundant deposits of subcutaneous fat, evidence of rhachitis, small size of heart and thinness of aorta and other arteries, persistence of thymus, and hyperplasia of lymphatic tissues in tonsillar ring, ileum and spleen.

In infants and before puberty, lymphatic hyperplasia, large thymus, and signs of rickets are prominent; whereas in adults there is the feminine character of the male body, often a persistent thymus, and cardiac and arterial hypoplasia. The body is gracefully formed, the limbs rounded, the thorax long, the pelvis heterosexual. There may be genu valgum, persistence of epiphyseal lines, flatfoot, and hyperextensibility of the elbow joints. The outstretched arms have in 95 per cent of the cases been found to exceed the body length. The genitals are often hypoplastic, axillary and thoracic hair is scanty or absent, and the pubic hair in the male ends in a horizontal line as in the female. The beard is scanty, sternal hair absent, and the hair of the limbs scanty or absent. The skin is delicate, there is a tendency toward abundance of subcutaneous fat, and sometimes distinct obesity.

In the female the external signs may be limited to thinness and delicacy of skin, narrow waist, arched thighs, and scanty hair. Menstruation is usually delayed, the uterus may be infantile, and the mammary development poor.

The frequency of status lymphaticus is shown by the fact that among 3,600 necropsies there were 288 cases.

Clinically, the condition causes many cases of unexpected death, either instantly or after rapidly increasing dyspnœa or heart failure. Death under anæsthesia occurs often in subjects of well-marked status lymphaticus. Cardiac and arterial hypoplasia

dominates the clinical picture in most adult cases. Hence, the subjects tire easily and suffer from palpitation, pain, cardiac dyspnoea and low blood pressure. Here may be classed the cases of sudden death while bathing, or after trivial mechanical trauma. Precocious apoplexy in young adults is a highly characteristic termination of status lymphaticus. Subjects of the condition do badly under infection.

Congenital hernia of the diaphragm. Downes, W. A., *Surg. Gyn., and Obst.*, 1918, xxvii, 393.

Diaphragmatic hernia occurs much more frequently than was formerly supposed. Such herniæ are usually congenital but may be acquired. The stomach and other abdominal contents may pass through the hernial opening and come to lie in the thoracic cavity. The opening is either an unusually large natural one, particularly the œsophageal, or more often it is abnormal and adventitious. Sometimes a portion of the diaphragm is absent.

Most of the congenital cases end fatally within a short time after birth, with symptoms of dyspnoea and cyanosis due to the pressure of abdominal contents in the thoracic cavity. The condition, however, is compatible with good health and a long life, as evidenced by the fact that cases in advanced age have been discovered accidentally. Its presence, nevertheless, is a constant potential source of danger, as it may cause embarrassment of heart and lung action by upward pressure or gastro-intestinal obstruction by constriction of that portion of the gut lying in the hernial orifice.

Intrathoracic goiter. Lamson, O. F., *Surg., Gyn. & Obst.*, 1918, xxvii, 397.

This type of goiter often escapes detection because it lies within the thoracic cavity and does not, therefore, manifest itself by external enlargement of the neck. Patients with this form of goiter are not infrequently treated for respiratory disturbances, such as asthma, or for aneurism, thymus tumors or hypertrophy.

Symptoms are due to pressure by the enlarged thyroid upon neighboring organs, as the œsophagus, the regional blood vessels, the vagus, or the laryngeal nerves, and comprise respiratory embarrassment, cyanosis, cardio-vascular disturbances, dysphagia and difficult phonation.

Intrathoracic goiter involves usually but one thyroid lobe. The pendulous type may be migratory; that is, when the patient is in repose the goiter may be found above the sternal notch.

The ætiology of fifty cases of drug addiction. Scheffel, C., *Medical Record*, 1918, xciv, 853.

Ninety-two per cent of drug addictions in a series of fifty patients voluntarily presenting themselves for treatment, were

found to have their beginning from careless administration of the habit-forming drugs by physicians for the relief of symptoms in previous illnesses. The following table illustrates this ætiologic relationship:

<i>Ætiology</i>	<i>Drug</i>	<i>Number of cases</i>
Asthma	Morphine	2
Biliary calculi	Morphine	3
Chronic gastritis	Morphine	1
Chronic dysentery	Morphine	1
Chronic dysentery	Opium	1
Chronic headaches	Morphine	4
Chronic headaches	Heroin	1
Chronic headaches	Bromides and chloral	1
Chronic vomiting	Morphine	1
Chronic appendicitis	Morphine	1
Chronic rheumatism	Morphine	1
Duodenal ulcer	Morphine	1
Dysmenorrhæa	Morphine	3
Insomnia	Morphine	5
Insomnia	Chloral	1
Luetic stomach	Morphine	1
Brachial neuritis	Morphine	1
Neurosis of stomach	Morphine	1
Overwork	Bromides	1
Post-operative adhesions	Morphine	3
Renal calculi	Morphine	1
Chronic sciatica	Morphine	1
Social	Morphine	3
Social	Cocaine	1
Treatment for alcoholism	Morphine	5
Treatment for alcoholism	Chloral	1
Tri-facial neuralgia	Morphine	1
Tri-facial neuralgia	Heroin	1
Traumatic neurosis	Morphine	1
Unknown	Opium	

Twenty-two per cent of the fifty cases were physicians.

BOOK REVIEWS

War Surgery of the Abdomen. Cuthbert Wallace, C.M.G., F.R.C.S., Eng. M.B., B. S. Lond., Surgeon, St. Thomas Hospital, Lecturer on Surgery in the Medical School; Consulting Surgeon, British Armies in France. With 26 illustrations. Published by P. Blakiston's Son & Co., 1012 Walnut St., Philadelphia.

This volume from its distinguished author comes as a message from the front, vividly portraying the nature of the magnificent service rendered by the medical profession in the world war. The introductory chapter describes the organization of the surgical service, and of the collection and evacuation of the wounded. The entire volume is devoted to injuries inflicted by bullets, shells and shrapnel and represents the work in abdominal surgery of a sector of the battle line during a period of thirty months. It is, therefore, founded on the experience of many surgeons working under different conditions, and the correlation of their experiences renders the volume valuable.

The author divides the abdomen into various sections, stating the significance of wounds inflicted therein. Many statistical tables illustrate the mortality following wounds of the viscera, both under early, delayed and expectant treatment. Shock is briefly reviewed, and the antiseptic and aseptic treatment of wounds is discussed.

After all, the writer concludes that "war surgery is largely concerned in overcoming adverse circumstances and in striving to make war conditions as much like peace conditions as possible." The inability to bring this about is an explanation of the excessively high mortality following abdominal section, as compared with that in civil hospitals.

J. E. B.

Genito-urinary Diseases and Syphilis. Henry H. Morton, M.D., F.A.C.S.; Clinical Professor of Genito-urinary Diseases in the Long Island College Hospital; Genito-urinary Surgeon to the Long Island and Kings County Hospitals and the Polhemus Memorial Clinic; Member of Committee on Venereal Diseases in the Office of the Surgeon-General; Consulting Genito-urinary Surgeon to the Flushing Hospital, to the Sea View Hospital Department of Health, New York City, to the Bushwick Hospital, and to the Beth Israel Hospital of Newark, N. J. Fourth edition, revised and enlarged; with 330 illustrations and 36 full-page colored plates. Pp. 807. Price, \$7.00. The C. V. Mosby Co., St. Louis, 1918.

The fourth edition of this most excellent book is thoroughly revised and brought entirely up to date. It is a work that should appeal alike to the genito-urinary surgeon and to the general practitioner. The illustrations are abundant and good. A few minor errors may be detected here and there. One of the grossest, due, no doubt, to printer's carelessness, is on page 26. The upper figure on this page is a quartered microscopic field, showing in each quarter various crystals found in urinary sediments. The figure is up-side down, so that the upper right quadrant contains uric acid crystals, whereas the legend beneath the figure has them labeled oxalates. These, however, are in the lower left quadrant. The contents of the other two quadrants are also inverted. To the expert in uranalysis this error is at once apparent, but to others it must necessarily prove confusing. Despite this and a few other minor errors, the book is a good one and can be highly recommended as a most useful addition to every practitioner's library.

English-French-Italian Medical Vocabulary. Joseph Marie, Philadelphia. Including reference tables of special value to physicians and nurses; phrases for directing first aid to injured; articles on pronunciation, European money tables, etc. Pp. 108. Price, 50 cents. P. Blakiston's Son & Co., Philadelphia, 1918.

This little book aims especially to provide the medical words that may be needed by doctors, Red Cross nurses and others, for use "over there." Most of the terms will not be found in the ordinary dictionaries, and for this reason the work should be particularly useful. Its compactness and small size are most desirable for the purpose for which it is intended.

RECENT DEATHS

Frederick Allen Stafford of Phoenix, Arizona, a graduate of Hahnemann Medical College of Chicago, died at his home, October 18, from pneumonia following influenza. He was a member of the Arizona Medical Association and president of the Arizona Board of Medical Examiners.

Lieut. Joseph Daniel Rosenthal, M.C., U. S. Army, of Brooklyn, N. Y., a graduate of New York Homœopathic Medical College and Flower Hospital in 1915, aged 27, died in the base hospital at Markleton, Pa., October 22, from pneumonia following influenza.

Lieut. Homer E. Van Epps, M. C., U. S. Army, of Sterling, Ill., a graduate of Hahnemann Medical College of Chicago in 1916, aged 31, died recently at Camp Mills, Long Island, N. Y., from pneumonia following influenza.

Curtis E. Bowers of Kersey, Colo., a graduate of Hahnemann Medical College of Chicago in 1902, aged 40, died at his home, October 22, from pneumonia following influenza.

William G. Gardiner of Atlantic City, N. J., a graduate of Hahnemann Medical College of Philadelphia, Pa., in 1888, aged 50, died at his home, October 17, from influenza.

Silas Baldwin Jacobs of Baltimore, Md., a graduate of Southern Homœopathic Medical College in 1905, aged 35, died at his home, October 17, from influenza.

Joseph T. Cox of Penn Yan, N. Y., aged 52, a graduate of Chicago Homœopathic Medical College in 1888, coroner of Yates County and health officer of Penn Yan, died at his home, October 25, from pneumonia following influenza.

Erastus E. Case of Hartford and Windsor Heights, Conn., a graduate of New York Homœopathic Medical College and Flower Hospital in 1874, president of the Connecticut Homœopathic Medical Society in 1888, died at the age of 70 at his home in Windsor Heights, October 27, from pneumonia.

Lieut. Robert Harrison Murdock, M. C., U. S. Army, of Wilkes-Barre, Pa., a graduate of Hahnemann Medical College of Philadelphia in 1913, was killed in action in France at the age of 28.

Ralph Waldo Homan of Webster City, Iowa, a graduate of the State University of Iowa, College of Homœopathic Medicine, in 1894, died at his home, October 31, from cerebral embolism, aged 49.

Harry S. Keller, aged 47, of Frankfort, Ky., a graduate of Pulte Medical College, Cincinnati, in 1892, died at his home in Albuquerque, N. M., on October 28.

Edward Bulger Chapman, aged 36, of Brockport, N. Y., a graduate of the University of Michigan Homœopathic Medical School, Ann Arbor, in 1907, died at his home, October 26, from pneumonia following influenza.

William Elmer Kiser, aged 33, of Bellaire, Ohio, a graduate of Cleveland-Pulte Medical College in 1911, died at his home, October 25, from pneumonia following influenza.

Arthur James Todd of New Boston, N. H., a graduate of Boston University School of Medicine in 1884, died recently at the age of 52.

Clinton E. Stark, aged 64, of Norwich, Conn., a graduate of New York Homœopathic Medical College and Flower Hospital in 1878, once president of the Connecticut State Homœopathic Medical Society, a member of the board of trustees of the Norwich State Hospital since its institution, died at his home, September 26, from pneumonia following influenza.

Capt. Charles A. Sturtevant, M. C., U. S. Army, of Manchester, N. H., a graduate of Boston University School of Medicine in 1899, aged 43, medical officer of the Seventy-Fourth U. S. Infantry, died at Camp Devens, September 24, of pneumonia following influenza.

Edward H. Wiswall of Wellesley, Mass., a graduate of Boston University School of Medicine in 1887, died at his home on October 7, aged 57.

Emory J. Walker of New Haven, Conn., a graduate of Hahnemann of Chicago in 1868, one of the founders of Grace Hospital, New Haven, Conn., and secretary of it since 1889, died on September 9.

Herbert A. Hands of Cambridge, Mass., died on September 18, at the age of 66.

A. H. Allen of New London, Conn., a graduate of Boston University School of Medicine in 1875, died September 17, at the age of 81 years.

Monroe D. Youngman of Ardmore, Pa., died October 11, of pneumonia. He was a graduate of Hahnemann Medical College of Philadelphia, in the class of 1911.

Lieut. Harry E. Davey, M. C., U. S. Navy, formerly of Keene, N. H., a graduate of Boston University School of Medicine in 1913, died October 15 of pneumonia.

Alfred M. Bigelow of Mansfield, Mass., died on July 30 of adenocarcinoma of the sigmoid, at the Massachusetts General Hospital, Boston, aged 55 years.

Channing Bishop, son of the late Dr. J. M. Bishop, died at his home in Bristol, N. H., on June 24. He was born July 26, 1864; was educated at Tilton Seminary, graduating from there in the class of 1884; he then entered Brown University and later studied medicine at Boston University School of Medicine, graduating in 1889. For several years he served as secretary of the New Hampshire Homœopathic Medical Society. He was a member of the American Institute of Homœopathy.

IMPROVING CITY MILK SUPPLIES

Sanitary milk control — an important factor in city welfare and a big problem of the city health department — receives personal attention from the Dairy Division of the United States Department of Agriculture. Specialists in sanitary production and handling of milk are usually available, and upon request of the city health departments they are sent to assist in improving the milk supply. This assistance may mean the making of a general survey lasting only a few days or a very intensive inspection lasting two or three months.

During the last year personal aid was given to 36 cities in 14 States. In addition to this, assistance was given the United States Public Health Service by conducting sanitary milk surveys and in improving the milk supply of 15 extra cantonment zones.

All phases of city milk supply are covered. Inspection of dairies, milk plants, and other distributing centers are made; samples of the products are taken and analyzed both chemically and bacteriologically. When necessary, help is given in the installation of laboratories and technique and in the interpretation of the results of chemical and bacterial analyses.

Special meetings may be held among both producers and consumers of milk in order to arouse interest in the local milk supply. Advice in framing ordinances to cover dairy and milk conditions is also offered.

An important feature is the milk contest work, in which specialists assist in instituting these contests and act as judges in scoring the product to determine the relative standing of milk producers. These contests encourage rivalry among dairymen and, in consequence, tend to improve the milk supply of a city.

BIRTH STATISTICS IN THE REGISTRATION AREA OF THE UNITED STATES : 1916

In the recently established birth-registration area of the United States — comprising the six New England states, New York, Pennsylvania, Maryland, Michigan, Minnesota, and the District of Columbia, with an estimated population of 33,000,000, or about 32 per cent of the total population of the United States — 818,983 infants were born alive in 1916, representing a birth rate of 24.8 per 1,000 of population. The total number of deaths in the same area was 486,682, or 14.7 per 1,000. The births thus exceeded the deaths by more than 68 per cent. For every state in the registration area, for practically all the cities, and for nearly all the counties, the births exceeded the deaths, usually by substantial proportions. The mortality rate for infants under one year of age averaged 101 per 1,000 living births. The foregoing are among the significant features of the report, "Birth Statistics in the Registration Area of the United States: 1916," soon to be issued by Director Sam. L. Rogers, of the Bureau of the Census, Department of Commerce, and compiled under the supervision of Dr. William H. Davis, chief statistician for vital statistics.

Comparison with 1915

The birth rate for the entire registration area fell below that for 1915 by one-tenth of 1 per 1,000 population; while the death rate exceeded that for 1915 by seven-tenths of 1 per 1,000. The excess of the birth rate over the death rate for 1916, 10.1 per 1,000, was thus a little less than the corresponding excess for 1915, which was 10.9 per 1,000. If the birth and death rates prevailing in the later year were to remain unchanged, and if no migration were to take place to or from the area to which they relate, its population would increase annually by about 1 per cent. This rate, compounded for a decade, would yield a decennial increase of a little more than 10 per cent, or about half the rate of increase in the population of the country as a whole between the last two censuses, 21 per cent.

White and Colored

Of the total number of births reported, 799,817, or 24.9 per 1,000, were of white infants, and 19,166, or 22.8 per 1,000, were of colored infants. The death rates for the two elements of the population were 14.5 and 24.4 per 1,000, re-

spectively. The deaths reported for the colored races (comprising all non-whites) thus exceeded the births reported; but it is probable that the registration of births is less nearly complete among the colored than among the white population, and that therefore the rate shown for the former class is too low, whereas in the case of the death rates there is probably not so great a margin of error.

Native and Foreign Mothers

Some indication of the fecundity of the native and foreign elements of the population may be obtained from a comparison between the proportion which the number of white foreign-born mothers formed of the total number of white mothers to whom children were born in 1916, and the proportion which the white foreign-born married women, aged 15 to 44, formed of the total number of white married women of corresponding ages in 1910.

From the table following, it appears that many more births occur to white foreign-born women, proportionately to their number, than to native women. In Connecticut, approximately 46 per cent of white married women aged 15 to 44 in 1910 were of foreign birth, but about 62 per cent of the white mothers to whom children were born in 1916 were natives of foreign countries.

STATE	1916. Per cent which foreign-born mothers formed of total white mothers.	1910. Per cent which foreign-born married females, 15 to 44, formed of total white married females, 15 to 44.
Connecticut.....	61.63	46.36
Maine.....	27.23	21.89
Maryland.....	14.82	13.11
Massachusetts.....	56.32	48.87
Michigan.....	32.80	26.45
Minnesota.....	26.80	33.99
New Hampshire.....	41.69	32.69
New York.....	52.84	42.71
Pennsylvania.....	37.65	27.77
Rhode Island.....	57.37	49.94
Vermont.....	24.04	18.11

Infant Mortality

The infant-mortality rate — that is, the number of deaths of infants under one year of age per 1,000 born alive — throughout the registration area as a whole was 101 in 1916, as against 100 in 1915. This is equivalent to saying that of every ten infants born alive one died before reaching the age of one year. Among the 11 states these rates ranged from 70 for Minnesota to 121 for Maryland; and for the white population separately the lowest and highest rates were 69 for Minnesota and 115 for New Hampshire. The high rate for the total population of Maryland was due to the presence of a larger colored element in that state than in any of the others, the rate for the whites alone being only 101.

The infant-mortality rates vary greatly for the two sexes and for the various nationalities.

With an infant-mortality rate of 101 for the registration area as a whole, the rate ranges for white children from 68 where mothers were born in Denmark, Norway, and Sweden, to 148 where mothers were born in Poland, while Negro children have a rate of 184. The range of rates among white males is from 74 for children of mothers born in Denmark, Norway, and Sweden, to 171 for those of mothers born in Poland, while Negro males have a rate of 202. The corresponding rates for females were 62, 124, and 166, respectively.

States and Cities

The following table shows, for the birth-registration area, by states and by cities having more than 100,000 inhabitants in 1910, the number of births in

1916, the per cent of excess of births over deaths, and the infant-mortality rate. Figures for the white and colored elements of the population are shown separately for those areas in which colored persons constitute more than one-tenth of the total population.

EXCESS OF BIRTHS OVER DEATHS, AND INFANT MORTALITY: 1916

AREA	Number of births.	Excess of births over deaths (per cent).	Deaths of infants under 1 year of age per 1,000 living births.
Registration area	818,983	68.7	101
<i>Registration states.</i>			
Connecticut	35,351	74.2	101
Maine	16,033	32.5	108
Maryland, total	33,631	49.7	121
White	27,305	63.9	101
Colored	6,326	6.0	209
Massachusetts	93,497	65.1	100
Michigan	86,840	88.1	96
Minnesota	55,459	127.1	70
New Hampshire	9,664	35.4	115
New York	241,456	58.8	94
Pennsylvania	217,449	74.7	114
Rhode Island	14,634	53.5	111
Vermont	7,768	37.2	93
<i>Registration cities having more than 100,000 inhabitants in 1910.</i>			
Connecticut:			
Bridgeport	4,598	94.8	106
New Haven	5,106	100.6	88
Maryland:			
Baltimore, total	14,542	36.5	122
White	12,278	54.1	104
Colored	2,264	1—16.6	219
Massachusetts:			
Boston	19,577	53.3	105
Cambridge	2,691	76.3	91
Fall River	3,689	68.8	173
Lowell	3,287	67.6	146
Worcester	4,941	70.2	101
Michigan:			
Detroit	24,289	121.6	112
Grand Rapids	3,131	100.0	75
Minnesota:			
Minneapolis	8,793	95.2	82
St. Paul	5,242	87.6	68
New York:			
Albany	2,280	11.4	97
Buffalo	13,088	73.3	114
New York	137,923	77.0	93
Rochester	6,816	82.6	86
Syracuse	3,853	63.2	100
Pennsylvania:			
Philadelphia	40,360	45.7	105

Pittsburgh.....	16,406	62.6	115
Scranton.....	3,623	71.5	131
Rhode Island:			
Providence.....	5,981	48.7	110
District of Columbia:			
Washington, total.....	7,201	11.2	106
White.....	4,979	25.3	83
Colored.....	2,222	¹ —12.2	158

¹ Per cent. by which births fell below deaths.

GOVERNMENT NO LONGER DESIRES PLATINUM

The Platinum Section and the Section of Medical Industry, War Industries Board, desire to express appreciation of the hearty response made by physicians, dentists and others when the call for scrap platinum was made.

As the Governmental demand for platinum in the making of explosives, etc., has been tremendously decreased by the curtailed war program, it is requested that no further scrap platinum be tendered to the Government through the channels indicated in our communication of September 17th, 1918.

CHARLES H. CONNER,
Chief, Platinum Section.

LIEUT.-COL. F. F. SIMPSON, M.C., U.S.A.,
Chief of Section of Medical Industry.

RAVAGES OF THE INFLUENZA EPIDEMIC

Deaths in America greatly outnumber war's casualties among American troops.

The influenza epidemic has thus far taken a much heavier toll of American life than has the Great War. The total loss of life throughout the country is not known, but the Bureau of the Census has been publishing, for 46 large cities having a combined population estimated at 23,000,000, weekly reports showing the mortality from influenza and pneumonia. These reports, which cover the period from September 8 to November 9, inclusive, show a total of 82,306 deaths from these causes. It is estimated that during a similar period of time the normal number of deaths due to influenza and pneumonia in the same cities would be about 4,000, leaving approximately 78,000 as the number properly chargeable to the epidemic.

The total casualties in the American Expeditionary Forces have recently been unofficially estimated at 100,000. On the basis of the number thus far reported, it may be assumed that the deaths from all causes, including disease and accidents, are probably less than 45 per cent and may not be more than 40 per cent of the total casualties. On this assumption, the loss of life in the American Expeditionary Forces to date is about 40,000 or 45,000.

Thus, in 46 American cities having a combined population of only a little more than one-fifth the total for the country, the mortality resulting from the influenza epidemic during the nine-weeks period ended November 9, was nearly double that in the American Expeditionary Forces from the time the first contingent landed in France until the cessation of hostilities.

For the 46 cities taken as a group, the epidemic reached its height during the two weeks ended October 26, for which period 40,782 deaths were reported — 19,938 for the week ended October 19 and 20,844 for the following week. Since October 26, however, the decline has been pronounced. During the week ended November 2, 14,857 deaths occurred, and during the following week only 7,798. The only city in which the number of deaths reported for the week ended November 9 exceeded the number occurring during the previous week was Spokane, Washington.

In general, the epidemic traversed the country from east to west. In a number of eastern cities — notably Boston, where the greatest mortality occurred

during the week ended October 5 — the largest number of deaths were reported for earlier periods than that which covered the height of the epidemic for the 46 cities taken as a group. On the other hand, in New Haven, New York, Pittsburgh and Rochester the maximum mortality occurred somewhat later than in eastern cities generally. In Baltimore, Buffalo and Philadelphia the two-weeks period ended October 26 showed the greatest number of deaths. For the entire nine-weeks period, the greatest mortality due to the epidemic, in proportion to population — 7.4 per one thousand — occurred in Philadelphia; and the next greatest — 6.7 per thousand — was reported for Baltimore.

RAILROADS ARE ASKED TO CEASE RIVER POLLUTION

Chairman Edward Hatch, Jr., Requests Director General McAdoo to Equip Rolling Stock with Suitable Sanitary Appliances to Ensure Cleanliness and Protect Health.

The Merchants' Association has long been interested in protecting water supplies and water courses adjacent to railroad rights of way from contamination, and it has urged the installation of suitable sanitary devices.

Agitated by Sanitary Committee

The matter has been agitated by The Association through the Committee on Pollution and Sewerage, of which Mr. Edward Hatch, Jr., is Chairman.

The need for carrying out the plan advocated by The Association has been generally admitted. The plan has been endorsed by many health officials, both State and Federal.

The matter was called to the attention of Director General McAdoo in a letter written by Chairman Hatch and delivered to the Secretary in person by him in Washington last Thursday, reading as follows:

"We beg to ask your earnest and immediate consideration of a plan to provide the Pullman cars, passenger coaches, mail cars and railroad workmen's conveyances with sanitary devices to prevent the discharge of the contents of the toilets used on the trains upon the railroad thoroughfares of this country. The present method of flushing the toilets scatters the objectionable and dangerous material from these necessary conveniences on and along the roadbed as the trains pass through cities, towns and villages, defiling the railroad stations and highway crossings.

Follow Water Courses

"Usually the railroad lines follow the course of a river, crossing and recrossing the same stream many times, passing over intercepting water courses and over lakes and reservoirs. The majority of these bodies of water are used either for drinking water, domestic or agricultural purposes, and the deposit of the material mentioned from the trains is a positive menace to health, especially if the origin of the pollution is from a "typhoid carrier" or other infectious sources.

"The material that is not thrown directly into the water is washed therein by the rains. That which is thrown on the roadbed dries and is fanned into mechanical suspension by the motion of the train and enters the car windows, ventilators, dining-cars and station dining-rooms or nearby houses, scattering broadcast the infected particles containing typhoid, tuberculosis and influenza bacteria. Particularly dangerous is the infection by this dust to the mail matter which is handled and assorted in the mail cars, making a convenient carriage of disease germs into the household and counting-house through the delivery of the letters. Also, the bodies and clothing of the passengers are covered with dust and conveyed to the home.

Flies Spread Disease

"The flies make their headquarters in or about these necessary conveniences, gathering the disease germs, which they disseminate at the various stations and vicinity when they leave the trains. The results of this unsanitary and unclean custom are evident to all.

"In 1912 a bill was introduced in the New York Legislature to compel rail-

roads traversing the State of New York to provide for the protection of the public health by prohibiting the present form of water-closets on railroad trains. As most railroad vehicles are interstate carriers and the cars of all railroads may have a destination which would take them into States affected by the provision of the proposed law, it was deemed necessary to take legislative action by each individual State, and the cooperation of the respective Governors was sought with indifferent success, due probably to complications which might arise over the interstate features.

State Boundaries Wiped Out

"Under your jurisdiction as Director General of the Railroads of the United States, the interstate boundaries as related to railroads are practically obliterated, and we believe under Federal control this reform on behalf of the public health could be instituted with few complications and little annoyance.

"A large number of cars are now being built and the additional expense to equip such cars with a 'sealed closet' during construction would be nominal. The cars already completed could be altered from time to time, when under repair, to meet the provisions of your decree. In the meantime one car in a train of three cars, or that proportion for larger trains, could be equipped with the proposed device, pending the convenient installation of all the passenger-carrying equipment of the railroads.

Efficiency for the War

"The Government must insist upon an advanced efficiency of man-power at this particular time, and a standard of cleanliness maintained and the health of our people preserved if the accomplishments for which we are contending are to be realized. The benefits which would accrue from this important and far-reaching improvement in the interest of the general health and welfare are manifest."

ENROLLMENT BLANKS SENT OUT BY THE COUNCIL OF NATIONAL DEFENSE

The Council of National Defense authorizes the following:

Many thousands of blanks for enrollment of the legally qualified men and women physicians of the country in the reorganized Volunteer Medical Service Corps are being mailed by the Chairman of the General Medical Board of the Council of National Defense. With the blank are enclosed a letter and a folder giving all details as to the organization.

The blank which applicants are asked to fill out reads:

APPLICATION FOR MEMBERSHIP IN THE VOLUNTEER MEDICAL SERVICE CORPS AUTHORIZED BY COUNCIL OF NATIONAL DEFENSE
APPROVED BY THE PRESIDENT OF THE UNITED STATES

(Spaces for date, full name, street, city and state addresses.)

1. Date of birth.
2. Place of birth.
3. If foreign born, when did you become a resident of the United States?
4. When and where naturalized? How?
5. Are you single, married, widowed, or divorced? Nationality? Color? Height? Weight?
6. State high school, academy, college, or university you have attended, with dates of attendance, graduation, and degrees received.
7. Give all literary or scientific degrees you have received and names of institutions granting them, with dates.
8. With what languages or branches of science are you familiar?
9. When and where graduated in medicine?
10. When and where licensed to practice medicine?
11. Name principal medical societies of which you are a member. (Do not abbreviate.)
12. What specialty of medicine do you practice?

13. Proportion of time devoted to specialty?
14. Clinical experience in specialty? Institution? No. of years?
15. State all past hospital services. Hospital. Capacity. Date.
16. Present hospital connections. Hospital. Department. Capacity.
17. School and teaching positions occupied in the past. School. Capacity. Date.
18. School and teaching positions now occupied. School Department. Capacity.
19. State all past experience in industrial or railroad medicine and surgery. NAME AND ADDRESS OF PLANT. TYPE OF SERVICE (whether medical, surgical, occupational diseases, accident work, contract practice for families of workmen, etc.) DURATION OF SERVICE.
20. State all present connections with industries or railroads. NAME AND ADDRESS OF PLANT. TYPE OF SERVICE (whether medical, surgical, occupational diseases, accident work, contract practice for families of workmen, etc.) TIME DEVOTED TO EACH PLANT.
21. State military, naval or public health experience you have had.
22. Are you a Federal, State, County, or Municipal officer? (State exact designation of your office.)
23. Are you engaged in enterprises other than medicine? If so, what?
24. Have you followed any occupation, medical or otherwise, not already noted?
25. Have you previously been an applicant for entry into the United States Service? Service. When. Where. Result. (If rejected, state why.)
26. I have not applied for appointment in the Medical Reserve Corps of the Army, the Naval Reserve Force, or the Public Health Service owing to — (Check reason).
 - a. Physical disability. (State disability in detail.)
 - b. Over age (55). (State age in Years.)
 - c. Essential institutional need. Name of institution. Position. Name and address of chief executive.
 - d. Essential community need. Approximate population. Number of physicians now practicing in your community.
 - e. Essential to Health Department. Name of department. Position. Name and address of chief of department.
 - f. Essential to industries. Name of plant. Position. Name and address of chief executive.
 - g. Essential to medical school. Name of medical school. Position. Name and address of dean.
 - h. Essential to Local or Medical Advisory Boards. Name and address of Board. Position.
 - i. Dependents. Number of dependents, including self but not employees. What proportion of your income or that of your dependents is derived from sources other than the practice of your profession? Do other persons contribute to the support of your dependents? Have you or your dependents other immediate relatives who could provide support for your dependents?
 - j. Sex. (State your sex.)
 - k. Religious conviction, not a citizen, or other reasons. (State reason.)
27. Are you available for any of the following services:
 - a. Consultant. Medical Service. Surgical Service. Public Health Service. Special Service — What?
 - b. Institutional. Laboratory. Administrative. Medical Service. Surgical Service. Special Service — What?
 - c. Medical service for industries. Part time. Full time. Own community. Other communities. Kind of work.
 - d. Local or Medical Advisory Boards.
 - e. Reclamation of registrants rejected for physical unfitness.
 - f. Services to needy families and dependents of enlisted men.
 - g. Sanitation.
 - h. Miscellaneous service.
28. Check the Governmental service in which you would prefer to serve, if selected.
 - a. Medical Reserve Corps of the Army.

- b. Naval Reserve Force.
- c. Public Health Service.

Note. — Wherever practicable, your preference will be given consideration. However, the exigencies of war may render it necessary to ask you to do service other than that indicated as your choice.

29. Personal references. (Name three, at least one physician.)

I hereby make application for membership in the Volunteer Medical Service Corps of the United States. I certify that, to the best of my knowledge and belief, the answers to the preceding questions are true and correct in every respect. I pledge myself to abide by the rules and regulations of the Corps; to apply for a commission in the Medical Reserve Corps of the Army, the Naval Reserve Force, or for appointment in the Public Health Service when called upon to do so by the Central Governing Board; and to comply with any request for service made by the Central Governing Board.

(Signature.)

(Present post-office address.)

An outline of the purpose and scope of the Volunteer Medical Service Corps, contained in the folder, is as follows:

Volunteer Medical Service Corps organization:

1. Provides means for obtaining quickly men and women for any service required.
2. Furnishes recommendations and necessary credentials to assure the best of medical service both military and civil.
3. Determines beyond question the attitude of the individual toward the war.

OBJECT OF CORPS

1. Placing on record all medical men and women in the United States.
2. Aiding Army, Navy, and Public Health Service in supplying war medical needs.
3. Providing the best civilian medical service possible.
4. Giving recognition to all who record themselves in Army, Navy, Public Health activities, or civilian service.

WORKING PLANS

All matters pertaining to the organization will be under the direction of a Central Governing Board, authorized by the Council of National Defense and approved by the President of the United States, and its affairs will be conducted from the general headquarters of the Volunteer Medical Service Corps at Washington, D. C., under the Council of National Defense.

OPERATING SYSTEM

1. Central Governing Board of 25.
2. Forty-nine State executive committees.
3. One representative in each county in every State.

Note. — (a) All men to be appointed to State and county committees preferably over 55.

(b) Each State executive committee to consist of five in the smaller States and one additional member in each of the larger States in proportion to each 1,000 medical inhabitants (to be nominated by State Committees, Medical Section, Council of National Defense, from among their own members).

(c) Each county of 50,000 population or under should have one representative. All counties having over 50,000 population should have one additional county representative for each 50,000 population or fraction thereof. All county representatives to be nominated by the State executive committee.

DUTIES

Central Governing Board. — To receive and pass upon all appointments.

State Governing Boards. — To receive facts from county representatives and make recommendations to Central Governing Board.

County Representatives. — To submit facts to State committees according to advice from Central Governing Board of State executive committees.

Under the reorganization, every legally qualified physician, man or woman, holding the degree of Doctor of Medicine from a legally chartered medical school,

who is not now attached to the Government service, and without reference to age or physical disability, may apply for membership and be admitted if qualified; whereas, the original organization admitted only those who for various reasons were ineligible to membership in the Medical Reserve Corps. The organization will mobilize the medical profession in order to provide for the health needs of the military forces and the civil population, and the recording and classifying of doctors will afford means of obtaining quickly men and women for any service required.

To date about 40,000 of the 144,116 doctors in the United States — not including the more than 5,000 women doctors — either are in government service or have volunteered their services. Up to July 12 the Surgeon General had recommended to the Adjutant General 26,733 doctors for commissions in the Medical Reserve Corps. About 9,000 others who applied were rejected. With the 1,194 in the Medical Corps of the National Guard and 1,600 in the Navy, the total — 38,527 — constitutes 26.73 per cent. of the civilian doctors. Deducting those who declined their commissions or who have been discharged because of subsequent physical disability or other cause, the number actually commissioned in the Medical Reserve Corps stands (August 23) at 23,531 with several hundred recommended whose commissions are pending. Of the 23,531 there are 22,232 now on active duty.

The need of using wisely the service of the medical men, in view of the universal war activities, is indicated when it is known that in the five weeks ended August 2, there were 2,700 medical officers commissioned in the Army, Navy, and Public Health Service — or at the rate of 540 per week. This rate at which enrollment is proceeding is the cumulative result of the operation of all the machinery which has been in process of setting up since the United States entered the world war. While the number commissioned in the five weeks mentioned may seem large, it is not much greater than the rate at which medical men have been receiving their commissions during the past year. There are now 28,674 medical officers commissioned in the three services — 26,027 in the Army, 2,427 in the Navy, and 220 with the commission of Assistant Surgeon in the United States Public Health Service. Of the 2,700 commissioned in the five weeks ended August 2, there were 2,527 in the Army, 169 in the Navy, and 4 in the United States Public Health Service. Also, 40 doctors designated as Acting Assistant Surgeons have been taken on in the Public Health Service in the last two months, 21 for work in extra-cantonment zones, 14 for special venereal disease work, and 5 for marine hospitals. The 26,027 in the Army medical service comprise 933 in the Medical Corps, the regular Army service; 23,531 in the Medical Reserve Corps; 1,194 in the Medical Corps of the National Guard, and 369 in the Medical Corps of the National Army.

It is estimated that at least 50,000 doctors will be necessary eventually for the Army. It can readily be seen that with the enrollment of these active men, their places in communities and institutions must be cared for and the work, therefore, throughout the country must be so systematized and coördinated that the civilian population may not suffer. An important aspect is the need for medical men in the communities where munitions and other vital war products are being made.

The Volunteer Medical Service Corps, supervised by the Central Governing Board now named, will thoroughly care for these needs.

In connection with the mailing of membership blanks for the Volunteer Medical Service Corps to all legally qualified men and women doctors of the country, Dr. Franklin Martin, Chairman of the General Medical Board of the Council of National Defense, says:

"Great as has been the response to the appeal for doctors, it must be greater. It is imperative that every doctor not already in a government service fill out, sign and return the blank to the offices of the Central Governing Board, Council of National Defense, Washington, at once. We believe thousands will do this, as they are anxious to be enrolled as volunteers for the Medical Departments of the Army and Navy before registration under the new draft law goes into effect. The appeal for enrollment in the Volunteer Medical Service Corps, which President Wilson has formally approved, is an official governmental call to service. This will place the members of the medical profession of the United States on record as volunteers, available for classification and ready for service when the call comes."

MASSACHUSETTS VENEREAL DISEASE REPORTS

To the Editor:

The appended figures will give you an idea of the progress to date of the campaign against venereal diseases in Massachusetts. While these figures are encouraging and bespeak a fine spirit of co-operation on the part of the medical profession as a whole, there is nevertheless much yet to be accomplished before figures can be presented which will actually indicate the prevalence of these diseases in the communities of our State.

A peculiar responsibility was thrown upon the shoulders of the physician when the decision was reached that syphilis and gonorrhœa should be made reportable by number only, unless lapsing treatment. It is the physician alone who holds the secret of the comings and goings of these carriers of disease, consequently it is to you that we must look for the close follow-up work which alone can make this system a success — for success it is proving to be; and you can make it a bigger success and a greater boon to humanity by following up every case which comes to your attention until you are satisfied that it is no longer a source of danger to the community.

Call us up, write to us, and do not fail to report to us immediately when in your judgment a patient is not continuing treatment in competent hands. Do not wait for the expiration of the six weeks of the original regulations! An additional regulation permits immediate report by name when advisable.

State approved and subsidized clinics are being established in the following cities. Those already in operation are marked with a star (*).

*Brockton Cy. Hos.
*Corporation Hos., Lowell
*Lawrence
Fitchburg
*Worcester Cy.
Springfield
Holyoke
*Pittsfield

*Fall River
Attleboro
New Bedford
*Lynn Hos.
Boston:
*Massachusetts General Hospital
*Boston Dispensary
*Massachusetts Homœopathic Hospital
*City Hospital

All these clinics are being supplied with free arsphenamin, manufactured by this department, and in all treatment may be had free (when conditions warrant it) for syphilis and gonorrhœa in both sexes. Evening pay clinics will be available in many cities. Hence we are urging you to support these clinics as a measure of health conservation and as a patriotic service to Army and Navy.

The value attached to this work by the War Department may be estimated by the fact that the Chief of this Subdivision is a Major of the Medical Corps, detailed to us by the War Department for the purpose of organizing this drive, not alone in this state but throughout New England.

It may be of interest to note these standards accepted by the United States Public Health Service for the discharge of venereal patients from the Government's clinics now established in extra-cantonment zones throughout the country. The basis for discharge of cases of syphilis is as follows:

"No case should be considered as cured for at least one year after the termination of treatment and unless the following conditions have been satisfied: (a) No treatment for one year during which time there have been no symptoms, no positive and several negative Wassermann reactions. (b) A negative provocation Wassermann reaction. (c) A negative spinal fluid examination. (d) A complete negative physical examination, having special reference to the nervous and circulatory systems. (e) A luetin test may also be included."

Before discharging male gonorrhœics the following requirements must be met: "1. Freedom from discharge. 2. Clear urine; no shreds. 3. The pus expressed from the urethra by prostatic massage must be negative for gonococci on four successive examinations at intervals of one week. 4. After dilation of the urethra by passage of a full-sized sound, the resulting inflammatory discharge must be negative for gonococci."

In the gonorrhœal infections of women absence of urethral and vaginal discharge is considered essential before release, in addition to the taking of:

"Two successive negative examinations for gonococci of secretions of the

urethra, vagina and the cervix, with an interval of 48 hours and repeated on four successive weeks."

It is recognized by all that even this comparatively thorough examination does not determine freedom from infectiousness but guarantees a reasonable degree of safety for the public health. The following figures report the degree to which the physicians of this state are meeting the new requirements. Those in a position to judge estimate that about one case in five is being reported. Boston with approximately 20 per cent of the total population of the state is reporting 40 per cent of the cases reported. This fact is to be taken with due consideration of the large field covered by the leading Boston clinics.

Total reported to Sept. 1, 1918, by number,	
Syphilis.....	2,116
Gonorrhea.....	5,044
	<hr/>
	7,160
Reported by name	
(because lapsing treatment).....	736
Of these	
Reclaimed.....	403
	{ S. 141
	{ G. 262
Lost.....	162
	{ S. { Male 18
	{ Female 6
	{ G. { Male 123
	{ Female 15

BOSTON REPORTS

Total venereal diseases reported by number to Sept. 1, 1918,	
Syphilis.....	1,016
Gonorrhea.....	2,166
	<hr/>
	3,182
Reported by name	{ S. 43
	{ G. 175
	<hr/>
	218
Of these:	
Reclaimed.....	26
	{ S. 6
	{ G. 20
Lost.....	124
	{ S. 15
	{ G. 109

MARY R. LAKEMAN,
Epidemiologist.

MEDICAL REGISTRATION LAW

BOSTON, SEPTEMBER 4, 1918.

Editor NEW ENGLAND MEDICAL GAZETTE:

At the time the Legislature passed the law requiring physicians to register with City or Town Clerks, many practitioners in this state were very much disturbed, and violently denounced the law and criticised the proponents of this measure.

The Supreme Court of Iowa, in the case of *Lynch vs. Kathmann et al.* (Ia. 163 N. W. R. 408), not only sustains the constitutionality of a similar law, but presents cogent reasons why the requirement is a reasonable regulation.

Some states require yearly registration of physicians, and where this plan has been adopted it has been found to be of value in providing approximately up-to-date information of the number and location of physicians in such states.

Physicians in this state should realize that our law was made as simple and free from burdensome features as possible, but should also understand that no

physician can legally conduct practice until local registration has been attended to, and furthermore, they cannot compel the payment of fees without meeting this requirement of law.

There may be some who have omitted complying with this requirement who may be unwittingly liable to prosecution and loss of income, for the Directory of the American Medical Association gives the names of a considerable number of physicians not reported by the cities and towns.

It is to be hoped that there will be no further need of calling attention to this matter in order to secure compliance with this law.

Respectfully,

WALTER P. BOWERS,
Secretary.

MASSACHUSETTS STATE EXECUTIVE COMMITTEE OF THE VOLUNTEER MEDICAL SERVICE CORPS

The Central Governing Board of the Volunteer Medical Service Corps of the Council of National Defense announces that the Massachusetts State Executive Committee of the Volunteer Medical Service Corps is comprised of the following physicians:

<i>Walter L. Burrage, M.D.,</i>	<i>42 Eliot St., Jamaica Plain, Boston.</i>
<i>J. Emmons Briggs, M.D.,</i>	<i>Boston.</i>
<i>E. A. Bates, M.D.,</i>	<i>55 Chestnut St., Springfield.</i>
<i>Forrest G. Martin, M.D.,</i>	<i>Lowell.</i>
<i>Walter P. Bowers, M.D., Chairman,</i>	<i>1 Beacon St., Boston.</i>
<i>Henry Jackson, M.D.,</i>	<i>380 Marlboro St., Boston.</i>
<i>Frederick B. Percy, M.D.,</i>	<i>194 Aspinwall Ave., Brookline.</i>
<i>F. W. Anthony, M.D.,</i>	<i>50 Merrimack St., Haverhill.</i>

The purpose of this Committee is to cooperate with the Central Governing Board in prosecuting all activities pertaining to the mobilization and enrollment of members of the Volunteer Medical Service Corps throughout the state.

The Central Governing Board of the Volunteer Medical Service Corps also authorizes the appointment of one county representative in each county in every state of the Union. The county representatives for Massachusetts are as follows:

<i>County</i>	<i>Name</i>	<i>Street</i>	<i>City</i>
Barnstable	<i>Dr. John P. Nickerson</i>		West Harwich.
Berkshire	<i>Henry Colt,</i>	<i>193 South St.,</i>	Pittsfield.
Bristol North	<i>F. A. Hubbard</i>	<i>157 High St.,</i>	Taunton.
Bristol South	<i>Charles A. Pratt,</i>	<i>60 Orchard St.,</i>	New Bedford.
Essex North	<i>I. J. Clarke,</i>	<i>112 Emerson St.,</i>	Haverhill.
Essex South	<i>W. T. Hopkins,</i>	<i>7 Atlantic St.,</i>	Lynn.
Franklin	<i>H. G. Stetson,</i>	<i>17½ Federal St.,</i>	Greenfield.
Hampden	<i>Frederick B. Sweet,</i>	<i>81 Chestnut St.,</i>	Springfield.
Hampshire	<i>E. W. Brown,</i>	<i>39 Main St.,</i>	Northampton.
Middlesex East	<i>E. S. Jack</i>	<i>56 W. Emerson St.</i>	Melrose
Middlesex North	<i>Charles E. Simpson,</i>	<i>9 Central St.,</i>	Lowell.
Middlesex South	<i>George T. Tuttle,</i>	<i>McLean Hospital,</i>	Waverley.
Norfolk	<i>E. N. Libby,</i>	<i>1990 Columbus Ave.,</i>	Roxbury.
Norfolk South	<i>J. H. Ash,</i>	<i>239 Copeland St.,</i>	West Quincy.
Plymouth	<i>Gilman Osgood,</i>	<i>258 Union St.,</i>	Rockland.
Worcester	<i>M. F. Fallon,</i>	<i>390 Main St.,</i>	Worcester.
Worcester North	<i>W. F. Sawyer,</i>	<i>67 Prichard St.,</i>	Fitchburg.

OFFICIAL ANNOUNCEMENT THE VOLUNTEER MEDICAL SERVICE CORPS

An Appeal to Executive Committees and County Representatives of the Volunteer Medical Service Corps, and State Committees of the Council of National Defense.

No official or committeemen representing the Volunteer Medical Service Corps or the General Medical Board of the Council of National Defense, is now authorized or has been authorized to favor any organized or unorganized method of coercion in inducing members of the medical profession to join the Medical Corps of the Army and Navy, or the Volunteer Medical Service Corps. Our committeemen are especially urged against favoring any movement that would threaten to impair a medical man's standing in his local, state or national society because he refused to enroll in the Army or Navy, or the Volunteer Medical Service Corps.

IT MUST BE MADE CLEAR THAT THE VOLUNTEER MEDICAL SERVICE CORPS IS A VOLUNTEER ORGANIZATION WHICH HAS FOR ITS OBJECT THE ENROLLMENT AND CLASSIFICATION OF THE PROFESSION. Its members are entitled to wear an insignia which will clearly indicate that they have offered their services to the government, when such services are needed. Patriotism cannot be created by coercion. It also must be made clear that the Volunteer Medical Service Corps has for its primary object, furnishing its classification to the Army, the Navy, the Public Health Service, the Red Cross and Provost Marshal, as well as to civilian institutions and communities, as a guide in providing for their needs to the best advantage.

The object of the Corps is not to disturb any medical man in the performance of any duty to which he has been assigned by any governmental agency either for service at the front or at home.

(Signed) EDWARD P. DAVIS, *President,*
Volunteer Medical Service Corps.

FRANKLIN MARTIN, *Chairman,*
General Medical Board, Council of National Defense.

BABIES IN A WAR INDUSTRIES TOWN

The inadequacy of the protection afforded babies and the imperative need for more effective means of preventing the deaths of little children in one of the towns where conditions have been greatly changed by the growth of war industries are revealed in a report on Waterbury, Connecticut, made public today by the *Children's Bureau of the U. S. Department of Labor*. Even before the war insanitary housing conditions, imperfect civic provision for educating mothers in the care of their children, indifference to the need of giving the many foreign-born mothers the advice and help they need to make them assimilate American ways and customs have militated to keep up the infant death rate, which averaged, for the years 1910-1915, 146.5 per thousand, or about one death in every seven live births, which is nearly half again the rate for the U. S. Registration Area.

But the rate was not uniformly high for all groups in the city. Two thousand one hundred and ninety-seven babies born between June 1, 1913, and May 31, 1914, were included in the study. In each case a personal visit to the home was made, and the mother, or, if she were not living, the person who had the child in charge, was interviewed. Rich and poor, native and foreign born alike were included and every one of them willingly gave the information desired. Two hundred and sixty-three of the babies had died before they were a year old. But of the babies of fathers who earned less than \$450 a year about one in six died during its first year, whereas when the father's yearly income was as much as \$1,250 the death rate was greatly reduced, and about one baby in every fifteen died. And a fifth of the births in Waterbury were in families where the father earned less than \$450 a year. By far the largest number of fathers in this lowest income group were employed in the factories. Waterbury is the largest brass and copper manufacturing city in the United States. The foreign-born men were much more poorly paid than the natives. About a third of the foreign-born fathers earned less than \$450 a year, whereas of the natives only about a twentieth belonged to this low-paid group. Few foreign-born fathers were earning as much as \$1,050.

But low income is not the only influence working for a high infant mortality rate among the children of foreign born parents. The infant

mortality rate among the Lithuanians as a whole, who form an important part of Waterbury's population, is far higher even than that for the lowest income group to which many of them belong. Of the babies born to Lithuanian mothers more than one in five died before it was a year old. The babies of Irish mothers died at a slightly lower rate. As a whole the babies of foreign-born mothers died at a rate more than a third higher than that of the babies of native mothers.

The report points out several reasons for this higher rate among the children of the foreign born. The foreign born mother has to contend against more dangers to her child's health than those which usually threaten children of fathers whose earnings are low. The isolation of the Lithuanian group especially tends to keep the families from growing accustomed to their surroundings in this new country. Many of them have come from the free outdoor life of the farm to wrestle with crowded tenement conditions. The Lithuanians show the largest per cent. of babies fed artificially; they show also the largest per cent. of infant deaths caused by improper feeding, the neglect that comes with ignorance of modern hygiene, poor housing, combined, it may be, with summer heat, against which other conditions have left the babies unprotected.

As a whole, Waterbury shows an infant death rate from preventable digestive diseases considerably higher than that for the Registration Area. The fact that modern hygiene knows how to prevent certain digestive diseases of babies is used as an argument for extending work that will give every mother the knowledge without which she cannot protect the lives of her babies.

Waterbury has not ignored the need for such civic work. It has a visiting nurses association, and since the survey was made by the Children's Bureau the association has extended its work. Few of the Lithuanians, however, who appear to be most in need of wise direction and advice in adapting their mode of living to the conditions in their adopted land have availed themselves of the organization's services.

The housing conditions in Waterbury were seriously congested even before the influx of war workers. Disrepair of buildings, inadequate and faulty plumbing, infrequent and irregular garbage collection, a milk or food supply that is insufficient or impure must, the report states, be controlled by the city if its citizens are to be guarded from disease. Yet in 1914 Waterbury appropriated only about a third of the recognized minimum for the work of its health department and in 1917 it appropriated even less per capita, in spite of its growing population. Even the greatly increased wages do not enable Waterbury's population to purchase healthful living conditions, without which the health of the community and the lives of the babies in it can not be conserved.

PERSONAL AND GENERAL ITEMS

Dr. Mary Parker announces her removal on September 1, 1918, to Mather Court, 1 Waterhouse Street, corner Garden Street, Cambridge, Mass.

A boost from the West:—" *I like the little magazine and would hate to miss a number, although I have taken it but a short time. I have found matter in it that far exceeded the price of the magazine.*" Pardon our blushes.

Harold F. Babcock, at present assigned to the Otology Department of the Research Laboratory, Air Service, at Mineola, Long Island, has been promoted to a captaincy.

William Rae Young, Boston University, 1912, has a position with the Westinghouse Electric and Manufacturing Company, Pittsburgh, Pa., in their Relief Department. He is doing chiefly eye surgery, and has opened office in the Williamsburg Bank Building.

Dr. Marion Shepard has removed from Northampton, Mass., to 531 Neville Street, Pittsburgh, Pa.

Because of the war, two French homœopathic journals "*L'Homœopathie Francaise*," published by Dr. Leon Vanner at 45 Rue de Lisbonne, Paris, and "*Revue l'Art Medical*," published by Dr. Tessier at 56 Rue de Matignon, Paris, have suspended publication.

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ORIGINAL COMMUNICATIONS

GALL-STONE DISEASE COMPLICATING PREGNANCY

AIMÉ PAUL HEINECK, M.D., Chicago

During gestation, women are subject to many surgical conditions. The safety of the product of conception and the safety of the mother demand that our knowledge of these surgical ailments be increased. Definite and accurate conclusions should be formulated as to the most opportune, most appropriate, and, therefore, the most scientific treatment of any and all surgical states complicating pregnancy. In previous contributions, I have stated that every case of ectopic pregnancy, irrespective of type or stage of development, calls for the immediate ablation of the ectopic ovum. This terminates gestation and protects the mother from the morbidity and fatality incident to extra-uterine pregnancy.

In other contributions, also published in these columns, we urged that every case of appendicitis complicating pregnancy be subjected to operation during gestation. Appendicitis is a surgical disease: when it complicates pregnancy, it calls for the immediate operative removal of the inflamed appendix, irrespective of the type of inflammation, irrespective of the age of the pregnancy. In women, previous to and during the child-bearing period, the non-operative treatment of appendicitis invites disaster, immediate, remote, or both. The timely removal of the inflamed appendix to a great extent protects the mother from the complications and sequelæ and from the morbidity and mortality incident to appendicitis. Operative removal of a diseased appendix does not interrupt gestation, nor does it exert any unfavorable influence on delivery.

The frequency of cholelithiasis makes this condition one of great practical interest. I have analyzed and studied all the

cases of undoubted gall-stone disease complicating pregnancy reported with sufficient data, thirty cases in all, in the French, English, and German medical literature, during the years 1900-1918, inclusive. Many more cases were studied, but owing to the fact that they are not reported with sufficient detail, they have influenced my conclusions only in a general way. In each case the diagnosis was verified either at the time of operation or at the autopsy.

In the collective statistics of nineteen European and American authors, comprising 80,802 necropsies, the frequency averaged 5.94 per cent (Hesse). As the manifestations of gall-stone disease are often unrecognized, misinterpreted, or misdiagnosed, its incidence is greater than is supposed; it is far greater than the number of reported cases would lead us to believe. It occurs in both sexes and at all ages; in the fat, in the lean, in the weak, and in the strong. The older the patient, the more liable is he or she to have gall-stones. "Gall-bladder disease is pre-eminently a disease of the middle-aged female, but is by no means confined to that age or sex." (Deaver).

Gall-stone disease is of common occurrence during pregnancy, during the puerperium, and during lactation. In fact, its greatest incidence is in the child-bearing period. Statistics have established beyond dispute that gall-stone disease, latent or manifest, is more common in women than in men. Out of 655 patients laparotomized for gall-stones, 536 were women, 119 men (Kehr). Of 1244 women operated upon for uterine myomata at the Mayo Clinic, 92 or 7.1 per cent. had gall-stones.

Statistics of 940 cases of cholelithiasis, (K. Grube)

Age	10-20	21-30	31-40	41-50	51-60	61-70	71-80
Male	2	6	44	55	38	6	5
Female	8	114	213	215	148	52	14
Married, with children	1	82	177	176	124	44	9
Married, without children	1	8	9	12	5	6	3
Unmarried women	6	24	27	27	19	2	2

Unquestionably, child-bearing has something to do with the frequency of gall-stones in that state. Cholelithiasis may complicate a pregnancy otherwise normal; and it has been found associated with ectopic gestation (Brothers). It occurs in primi-

paræ (Heineck), deutoparæ (Barillon), multiparæ, VIII-paræ (Roith), IX-paræ (Graham). Manifestations of cholelithiasis may precede, coincide with, or follow an abortion or a premature labor. In seven of the analyzed cases, there was a history of one or more abortions, accidental or induced; Watson reports one; Villard; two, Peterson, six; Brothers, ten. Gall-stone disease may become manifest and necessitate operative relief at any period of gestation: at the second month (Bosse); third month (Roith); fifth month (Mack); sixth month (Moulden); seventh month (Davis). In a large number of cases, the initial symptoms first occur during the child-bearing period (Rudeauux).

The cases may be classified according to patients' ages at time of operation as follows: The youngest was 21 years old (Villard), the oldest 42 years (Amann). From 25-29 years, inclusive, there were 19 patients; 30-35 years, inclusive, 11 patients; 36-40 years, inclusive, 5 patients.

Ploger reports cases in which there was a definite aggravation of symptoms during pregnancy; and Naxera reports eight cases in which the first attacks of biliary colic occurred during gestation. Torrance states that "75 per cent. of gall-stones are found in women, and in 80 per cent. of these patients the symptoms developed during pregnancy." Gall-stones are more commonly found in women who have borne children than in those who have remained sterile. Osler, quoting Naunyn, states that 90 per cent. of women with gall-stones have borne children; and Peterson says that "84 per cent. of 135 women with gall-stones had borne children."

The literature of the subject contains case reports like the following: In an empyematous gall-bladder, associated with pericholecystitis, perforation from stones occurred during labor. Two days later the patient was operated; thorough drainage was instituted; sepsis developed. Death occurred on the third post-operative day (Rose). Rupture of a calculous gall-bladder can occur previous to, during, or after labor. Pinard successfully operated a case of calculous cholecystitis on the eleventh day of the puerperium. Vineberg incised the gall-bladder in two cases of acute cholecystitis, in one case on the tenth day, in the other on the twelfth day after delivery, and removed numerous small stones therefrom. Both cases recovered. In the same report he discusses a case of acute diffuse peritonitis consecutive to a ruptured gall-bladder, supervening a few hours after normal delivery. The condition was too grave to warrant surgical intervention. Death resulted twenty-four hours later. This patient had had, during her pregnancy, several attacks of biliary colic; her distended gall-bladder had been mapped out.

Potocki's patient, a deutopara normally pregnant for eight

and a half months, had a sudden attack of right hypochondriac pain, nausea, vomiting, etc. Labor having started, the patient was delivered of a living, normal child. Eleven hours after the termination of labor, a cholecystostomy was performed; the gall-bladder contained pus and numerous calculi. The patient recovered.

In the discussion provoked by Graham's case, there was reported a case of death from general peritonitis due to rupture of the gall-bladder during labor. Necropsy revealed the rupture and 250 stones scattered about in the abdomen.

Thus it is seen that medical attendants should bear in mind that fever during the puerperium can be due to causes other than puerperal fever; such as appendicitis, gall-bladder disease, etc.

Greater familiarity with the symptomatology, clinical course, and treatment of cholelithiasis complicating pregnancy will lessen the frequency of occurrences like those related above, and will also qualify us to combat successfully the various manifestations of gall-stone disease.

AETIOLOGY

The cause of gall-stone disease is not definitely known. Numerous theories have been advanced; not one has, as yet, been found worthy of general acceptance. The following three factors, owing to their frequency previous to or during the existence of gall-stone disease, impress one forcibly as being important predisposing causes. In the individual case, one, two, or all of these three favoring influences may be operative.

a. Conditions associated with, favoring, or causing biliary stasis.

b. Inflammatory states of the biliary tract, primary or secondary to local disease, or to some general febrile state.

c. Regimens or diatheses favoring or causing hypercholesterinæmia.

Cholesterin, usually the principal component of gall-stones, is derived from the bile. Simple bile-stasis can, through the precipitation of cholesterin, lead to cholesterin-stone formation. Precipitation is prone to occur in inspissated bile, and the elements thrown down may lead to stone formation. In the later months of pregnancy, the abdominal muscles and the diaphragm contract feebly, and the bile, being inefficiently expelled, stagnates in the gall-bladder.

Stasis, in addition to separating out the essential constituents of gall-stones from the bile, favors the growth of bacteria in the residual fluid. According to Sherrington, bacteria cannot enter the bile ducts as long as the bile is expelled at regular

intervals. Bile is not an antiseptic; it does not prevent the development of bacteria; left exposed to bacterial contamination, it undergoes putrefaction. Obstruction to the bile outflow may be due to foreign bodies present in the gall-bladder, or in the larger bile ducts it may be determined by inflammatory or other degenerative changes involving the gall-bladder or the bile ducts; or it may result from such pathological states of contiguous organs as lead to impingement of one or more of the latter upon the biliary passages. Obesity, sedentary life, constipation, tight clothing (such as ill-fitting and improper corsets), etc., are held by some to be predisposing factors. Miyake believes that the non-wearing of corsets by Japanese women is one of the principal reasons why gall-stones are so infrequent among them.

Bacterial organisms are said to be the most essential cause in the majority of cases of gall-stones. In this connection, one should not ignore the relation of mouth and teeth infections to appendicitis and cholecystitis. In some cases supplementing the noxious influence of bile stasis, in others acting independently, in many acting conjointly, there is present a bacterial inflammation of the mucous membrane of the gall-bladder, of the bile ducts, or of both. If the stone be of aseptic origin, the abnormal element lies in the composition of the bile; if the stone be of inflammatory origin, the pathological cause is the cholecystitis or catarrh of the gall-bladder.

A history of acute cholecystitis first observed within a few weeks or months of parturition is given by many of the patients operated upon for gall-stone disease. Both pregnancy and the puerperium are not infrequently complicated by acute exacerbations or recurrences of cholecystitis (Bettmann). The gastrointestinal disturbances and constipation that attend the pregnant state no doubt favor the migration of the *Bacillus coli* to the gall-bladder.

Although infection and retarded bile outflow predispose to gall-stone formation, they are not all-sufficient. Occlusion of the cystic or of the common duct may co-exist with an infected gall-bladder, and yet no gall-stones form. In order to produce calculi, infections of the gall-bladder must be of low type; as with colon bacillus, typhoid bacillus, staphylococcus, etc. Typhoid fever is considered an important ætiologic factor; it occurs in all lands and among all races, still gall-stones are very uncommon in the tropics; typhoid fever is less prevalent than formerly, but there seems to be no decrease in the number of patients having gall-stones.

Dietetic conditions can so alter the composition of the bile as to favor, suitable local conditions existing, the production of

calculi. It is likely that gall-stones are deposited as a result of errors in metabolism (over-concentration of cholesterin in blood and bile). Aschoff's theory of gall-stone formation can be stated briefly as follows: Cholesterin is a normal constituent of the bile and of the blood, its amount therein depending upon the amount of cholesterin in the food. A diet rich in fats and albuminous foods raises the cholesterin content of the bile. There is a distinct cholesterin diathesis. Persons with this diathesis, even upon an ordinary diet, retain their lipoids; an increased cholesterin content of the blood and of the bile results, and, sooner or later, a sudden precipitation of the bile cholesterin in the form of gall-stones may occur. Stones are often present in patients with no excess of cholesterin in their blood, the cholesterin shower having occurred at some previous time.

While in the pregnant woman the presence of hypercholesterinæmia, associated with a clinical history of gall-stones, is strongly suggestive of cholelithiasis, a low cholesterin figure does not prove the absence of gall-stones. The cholesterol increase becomes manifest during the second half of gestation (Slemons and Curtis).

The sedentary life of the pregnant woman and the encroachment of the enlarging pregnant uterus upon the liver and its biliary passages favor bile stasis. The normal obstetric patient eliminates less during the entire period of gestation than the normal non-pregnant woman. There is no well recognized line of demarcation between normal and pathologic pregnancy. During pregnancy, the foetal metabolism throws extra work upon the maternal liver; this may determine a temporary impairment of function, an hepatic insufficiency, evidenced by urobilinuria, alimentary glycosuria, moderate icterus, etc. This added stress also predisposes to local liver changes, evidenced by "the liver of pregnancy," icterus gravidarum, acute yellow atrophy of the liver, etc. The factors enumerated above, taken in connection with the fact that the bile and blood of pregnant women contain more cholesterin than the bile and blood of men or non-pregnant women, explain in part the greater frequency of gall-stones in child-bearing women, and the undeniable ætiologic influence of pregnancy in gall-stone formation.

PATHOLOGY

One, two, three, or more biliary calculi may be present in the same patient. From pregnant patients Moulden removed 17 biliary calculi, Bosse 26, Graham 80 odd, Roith 84, Finkelstone 86, Brothers 250. In reporting his case, Davis says the calculi were "too numerous to count."

Gall-stones vary in volume, in shape, in location. Bishop says that in his case the calculi were "like fig-seeds"; Mack, that they were "pea-shaped"; Barillon, "mulberry-shaped"; Peterson, "facetted." In Rissmann's case the calculus was large, long and elliptical; in Roith's, pigeon-egg-sized. In many of the cases, where numerous, the calculi were pea-sized.

Gall-stones usually develop in the gall-bladder, rarely in any other portion of the biliary tract. In their wanderings, they may lodge in the hepatic duct; in the cystic duct; in the common duct (Ploger), or in the duodenal end of the common duct, including the ampulla of Vater (Rissmann). Thus "Autopsy showed stones in the hepatic duct and in the common duct" (Peterson). From a VI-para, 2 months pregnant, Bosse removed one gall-stone from the common duct and twenty-five from the gall-bladder. Moulden states that "Seventeen stones were scooped out of the dilated cystic duct" and later Moulden reoperated his patient, opened the duodenum, and removed five small stones from the ampulla of Vater.

Stones may precede the presence of inflammatory changes in the gall-bladder, or they may be associated with and be the cause or effect of inflammation, slight, moderate, or severe. The inflammation may be limited to the gall-bladder (cholecystitis), or to the larger ducts (cholangitis); it may spread to the finer radicles of the biliary tract (diffuse cholangitis), or it may be diffuse, involving the gall-bladder and the biliary passages. Cholelithiasis may result from cholecystitis, and, once established, it becomes a factor in the maintenance of the cholecystitis, and in the causation of recurrent attacks thereof.

Inflammation of the gall-bladder and bile ducts is acute or chronic, ulcerative, perforative, adhesive, catarrhal, phlegmonous, suppurative, or gangrenous. It may be limited to the mucous membrane, or involve part (Davis) or the entire thickness of the gall-bladder wall. In the latter case, adhesions are very liable to form between the gall-bladder and one or more contiguous organs. The exudate accompanying these inflammations is mucous, serous, sero-fibrinous, or purulent (Graham) in nature. Thus, Moulden states that the "Gall-bladder, in addition to calculi, contained 200 cc. of pus." If perforation or rupture of a gall-bladder occur, the stones present therein may escape, either into the peritoneal cavity, into a mass of adhesions, or into the liver substance.

Graham, operating upon a IV-para, six months pregnant, for a ruptured gall-bladder, removed three stones from the peritoneal cavity, one from the gall-bladder, and two from the cystic duct.

Should the inflamed gall-bladder become adherent to a

neighboring viscus, the resulting adhesions may cause functional impairment, or an internal fistula may result, through which the gall-stones may escape; if the gall-bladder become adherent to the abdominal wall, the inflammation may involve the latter, and lead to the formation of an inflammatory mass from which, ultimately, an external biliary fistula may result.

Amann's patient, a multipara in the fifth month of pregnancy, noticed a painful mass, supposedly a fibroma, developing in the hepatic region. She went through a normal labor, and three months later this painful tumor mass was successfully removed. It had resulted from a pericholecystic inflammatory process extending to and involving the contiguous abdominal wall and the appendix vermiformis, and it consisted of a ruptured gall-bladder and an extruded gall-stone, an appendix and an inflammatory tissue mass.

Impaction of a stone in the cystic duct may lead to:

1. Dilatation of the gall-bladder, and a resulting
 - a. simple hydrops (the wall of the gall-bladder may be greatly thickened; may be paper-thin; may be almost transparent.)
 - b. empyema.
2. Acute or chronic cholecystitis: catarrhal, serous, sero-fibrinous, suppurative, gangrenous, phlegmonous, ulcerative, perforative, adhesive.
3. Sclerosis of the gall-bladder, either atrophic or hypertrophic.
4. Calcification of the gall-bladder.

If the calculus becomes impacted in the common duct, there may result any of the afore-mentioned complications or a distention of the common duct (Bosse), with or without cholangitis.

Inflammation in the common duct involving contiguous tissues may produce a thrombo-phlebitis and thus interfere with the circulation through the liver, or it may extend to the head of the pancreas, changing it to a firm tumor (Finkelstone). Max Neu found the gall-bladder in his case shrunken and the common duct widened and bound down by broad inflammatory adhesions to the duodenum.

SYMPTOMS

Moynihan, Mayo, and many other careful clinical observers are of the opinion that gall-stones do not exist without producing symptoms; they state that the vague term "indigestion" is used variously by patients to indicate all the several forms of distress which are the forerunners of a crisis of acute biliary colic. Parks claims that the statement "may not cause symptoms" is an admission of inability to recognize incipient symptoms.

Gall-stones produce symptoms by irritation, by migration, and by obstruction. Pain and tenderness are most constant and most important symptoms of cholelithiasis, being described by the patients under a variety of terms, such as discomfort (Roith), deep soreness (Villard), biliousness, dyspepsia, gastric distress (Barillon), neuralgia. The pain, usually limited to the region of the gall-bladder, radiates quite often to the epigastrium, subscapular region, neck, shoulders, arms, etc. Thus, we read, "Pain in hepatic region" (Bosse); "Pain in right hypochondrium, extending to right shoulder" (Davis); "Repeated attacks of pain under the right scapula, extending around to the epigastrium" (Bishop); "Lancinating pain in epigastrium radiating to back under the shoulder blade" (Moulden); "Sudden attack of pain in region of navel" (Roith); "Pain in right hypochondrium, radiating to shoulder and to back" (Villard).

What causes this pain? Various factors are involved, chief among which are the calculi themselves; the inflammation present in the gall-bladder and in the biliary tracts; and adhesions of inflammatory origin binding the gall-bladder or the cystic or common ducts to adjacent organs. These adhesions may also determine severe functional disturbances of stomach and intestines.

"The most characteristic and constant sign of gall-bladder hypersensitiveness is the inability of the patient to take a full inspiration when the physician's fingers are hooked up deep beneath the right costal arch below the hepatic margin. The diaphragm forces the liver down until the sensitive gall-bladder reaches the examining fingers, when the inspiration suddenly ceases as though it had been shut off. I have never found this sign absent in a case of calculus or in infectious cases of gall-bladder disease." (Murphy).

The localized tenderness and the rigidity of the abdominal wall may be so marked that satisfactory palpation is difficult or impossible. Other factors, as a thick abdominal wall, meteorism, deep location of the gall-bladder, may prevent the detection of the latter. In a few cases, however, a gall-bladder distended by calculi (Peterson, Roith), or by fluid of mucous, purulent, or other nature, or by both calculi and fluid (Villard), can easily be mapped out. A gall-bladder contracted by inflammation does not give rise to a palpable tumor.

JAUNDICE

In the diagnosis of gall-stone disease, too much significance has been attached to the symptom jaundice. It is an important sign, but is not to be considered essential to diagnosis; like hæmorrhage in duodenal ulcer, it ought not to be waited for.

Jaundice may not occur at all (Heineck, Finkelstone), it may be inconspicuous, it may be late, it may be inconstant. In some cases each attack of gall-stone colic is followed by transient jaundice (Bishop). The presence of jaundice was definitely recorded in twenty of our thirty cases. Jaundice was accompanied by its usual concomitant manifestations: digestive disturbances (Villard), beer-brown urine (Bosse, Davis, etc.), clay-colored stools (Ploger, Rissmann, etc.).

In diseases of the biliary passages, icterus is of two forms; it is either of inflammatory or of lithogenous origin. The cause of the first is an inflammatory swelling of the mucous membrane of the biliary passages (Korte, Barillon). In gall-bladder infection the swelling of the mucous membrane may extend and involve the common and hepatic ducts and thereby obstruct the bile flow. The mechanical occlusion, partial or complete, of the common duct by a calculus, causes lithogenous jaundice. Icterus is frequently due to both inflammatory and calculous obstruction.

As long as a calculus remains in the gall-bladder, or in the cystic duct, jaundice is not likely to appear. In eleven of the cases in which jaundice was observed, there was present, with or without other calculi, a common duct stone (Bosse, 3 cases; Heineck; Mack, 2; Ploger; Rissmann; M'Nee; Roith, 2). In a lesser number of cases the provocative cause was the compression of the common duct or of the extra-hepatic part of the hepatic duct by a large stone in the cystic duct, by swollen lymphnodes, by inflammatory exudates, by adhesions compressing or kinking the ducts, etc.

COLIC

As stated before, gall-stones cause pain through the irritation, infection, and inflammation that result from their impaction in the neck of the gall-bladder or in any part of the bile-ducts. They also cause a characteristic lancinating pain, agonizing in nature, by meandering through the bile ducts for a, shorter or longer distance and setting up a spasm of the muscular wall behind them. This latter pain is intense, is designated as biliary colic, and is usually accompanied by chills, frequent vomiting, white lard-like stools, and bile-stained urine.

Gall-stone colic can be caused by: 1. an adherent, inflamed gall-bladder containing calculi (Finkelstone) or having contained calculi; 2. an inflamed gall-bladder distended by fluid or stones, its cystic duct being occluded by inflammation or by a calculus (Barillon) or calculi; 3. the entrance into or attempted passage through some part of the ducts of a calculus, altered bile, mucus, or other irritating foreign body; 4. the transit of a stone

through the bile-passages; 5. impaction of a stone in a dilated and inflamed common duct or in any of its tributaries. (Bosse, two cases; Ploger; Rissmann.) All the cases with stone in the common duct gave a history of biliary colic.

DIAGNOSIS

If the symptoms are typical, the diagnosis of gall-stone disease is easy. In addition to recognizing the condition of cholelithiasis, the surgeon should, if possible, determine the exact location of the calculi and note what pathological conditions or changes may be present. Digestive disturbances are undoubtedly the cause of most failures to recognize early gall-bladder symptoms. Cholecystitis or cholelithiasis, owing to their reflex symptoms, are often mistaken for diseases of the stomach.

By keeping in mind that much of the dyspepsia of pregnancy is from unrecognized gall-stone disease, and that gastric disturbances in pregnancy should receive careful consideration and not be regarded simply as concomitant features of the pregnant state, many diagnostic errors will be avoided. The discovery of calculi in the feces is evidence of their previous existence. It is not proof that any remain. X-ray pictures taken and interpreted by expert roentgenologists are of paramount importance in the diagnosis of biliary, renal, or ureteral calculi. The absence of any roentgenographic shadow does not, however, prove the absence of gall-stones. "X-ray revealed outline of gall-bladder filled with stones" (Peterson).

Important aids for arriving at a correct diagnosis are:

1. An exact history, including the record of previous attacks of hepatic colic; ("Previous attacks of biliary colic" [Rissmann, Ploger]; "Gave a history of having had similar attacks during her previous pregnancies," [Davis]; "Previous attacks of biliary colic. Three years ago, first attack of pain in hepatic region. Since then, recurrent attacks" [Bosse]).

2. The location of the tenderness and pain and the nature and radiating character of the latter.

3. A thorough examination, including careful inspection and palpation of the abdomen, especially of the hypochondriac region.

4. The exclusion of such pathological conditions as simulate gall-stone disease: lead colic, renal colic, duodenal ulcer, nephrolithiasis, chronic appendicitis, movable kidney, infection of the genital tract. It is to be noted that cholecystitis is frequently diagnosed appendicitis and *vice versa*, that gall-stone disease and appendicitis are frequently present in the same patient; and that cholelithiasis may co-exist with other pathological states.

TREATMENT

In cholelithiasis, two urgent indications are present: 1. the removal of the calculus or calculi present in the gall-bladder or ducts; 2. the cure of the inflamed condition of the bile tracts. It is agreed that gall-stones should be removed. No one nowadays treats a vesical calculus by other procedures than operation. The spontaneous passage of a calculus through the intestine may bring about a cure, but other calculi usually remain in the gall-bladder, and any one of them may set up an inflammatory attack. In gall-stone disease, medical treatment is purely prophylactic, merely palliative. It is not curative. Moynihan says, "I hold that once a diagnosis has been made, operation is always indicated unless there are grave reasons forbidding resort to surgery. Reasons should not be asked to support a plea for operation, but to justify any other course than this."

The earlier the patients are operated, the more prompt the relief; the more numerous the complete recoveries. With advancing pregnancy, the technical difficulties incident to operations on the gall-bladder and bile ducts increase.

In these cases, I never use chloroform as a general anæsthetic, because I am afraid of its action on the liver cells. I have been well pleased with the use of a hard, round cushion placed transversely beneath the dorso-lumbar region.

One of three operations, choledochotomy, cholecystostomy, or cholecystectomy, is usually performed, the type of operation selected depending, in the individual case, upon the location of the calculi and upon the nature of the associated complications. In the extraction of calculi from the bile ducts, injury of the duct and wall should be avoided. Rather than risk this, the incision in the duct should be prolonged.

If the calculus or calculi are in the hepatic or common bile duct, their removal is effected by incising the common duct; drainage is instituted through this incision. Recovery followed in the three cases (Bosse, 2; Ploger, 1) in which this was done. Rissmann successfully removed a calculus from the duodenal end of the common duct by incising the anterior and posterior duodenal wall. In the cases in which stones were present in the gall-bladder and in the common duct, the performance of a cholecystostomy and a choledochotomy at one sitting, plus the institution of hepatic drainage gave satisfactory results (Bosse, Mack, Neu, etc.). Roith, in a case in which stones were present in the common duct, removed the gall-bladder, then incised the common duct and drained through the latter; recovery resulted.

Davis, in a patient seven months pregnant, performed a

cholecystectomy. Forty-five days later, the uterus was dilated manually and a premature foetus was extracted. In all of the other cases, a cholecystostomy was performed. Finkelstone, in his case, did a cholecystostomy and one year later he performed a cholecystectomy. In some cases, owing to the coexistence of other pathologic states, additional operative work was done. There were two deaths (Graham, Peterson), in the series of cases under consideration. In Graham's case, the patient, at time of operation, had a general peritonitis from her ruptured gall-bladder. In Peterson's case, there was considerable blood oozing (the coagulation time of the blood was seven minutes), and there developed acute post-operative suppression of urine.

In those cases of gall-stone disease in which other pathological states were present, appropriate additional operations were performed. Erdmann, in his case, did a cholecystostomy and an appendectomy. Brothers, in one case, removed 205 gall-stones, exsected one inch of the left tube to induce sterility, and did a right salpingo-öophorectomy for an existing right tubal gestation.

There is a wide difference of opinion as to which operation, cholecystostomy or cholecystectomy, is indicated in gall-stone disease. Some operators almost invariably perform a cholecystostomy; others, equally competent, believe that cholecystectomy is the most universally applicable operation for the cure of cholelithiasis. Others do as Kummel who says, "We remove the gall-bladder when we must, we save it when we can." It is well to select the operation which can be performed in the shortest possible time consistent with the existing conditions of the biliary passages. After cholecystectomy, re-drainage of the biliary passages may prove extremely difficult and dangerous. The advocates of cholecystectomy claim that the removal of the organ takes away the possibility of stones being left behind or being reformed, and that it does away with an inflamed organ. It is agreed that cholecystectomy is attended with more technical difficulties than cholecystostomy. It requires greater care to avoid injury to the bowels, vessels and the main bile ducts. It is wiser to choose the safer operation until the technic of the more complicated one has been mastered.

Cholecystostomy is the operation of election:—

1. Whenever the patient's condition is so bad that the difficulties attending a cholecystectomy render its performance unsafe.

2. When the gall-bladder is not seriously damaged and when the cystic duct is not ulcerated or narrowed by stricture. It is believed that the gall-bladder has some other function than that of a mere receptacle of bile.

3. When the common duct is strictured.

4. If jaundice and pancreatitis complicate the gall-stone disease.

Cholecystectomy is indicated:—

1. For very thick, acutely inflamed, or gangrenous gall-bladders when a stone is impacted in the cystic duct.

2. For chronically thickened gall-bladders. A thick-walled gall-bladder which has become functionless should always be removed. When the gall-bladder becomes thickened and hardened from long-continued inflammation, it is manifestly impossible that it should dilate no matter what obstruction there may be in the common duct.

3. For large gall-bladders distended with clear fluid and resulting from the impaction of a stone in the cystic duct.

4. For the "strawberry" gall-bladder (chronic thickening with ulceration).

5. For a calculous gall-bladder adherent to the stomach, intestine, or omentum.

6. When the walls of the gall-bladder are so modified by disease that neither the storage nor the expulsion of bile is possible.

SUMMARY

1. Gall-stone disease occurs with far greater frequency in women than in men; with far greater frequency in women who have borne children than in women who have remained sterile. Its period of greatest incidence is the child-bearing period.

2. Gall-stone disease, alone or associated with one or more other related or non-related pathological states, not uncommonly complicates a pregnancy otherwise normal or abnormal.

3. The first manifestations of cholelithiasis may date from the existing gestation or from a previous pregnancy; may precede, coincide with, or follow an abortion or premature labor, accidental or induced.

4. All conditions that are associated with, that favor or cause: *a.* bile stasis; *b.* inflammatory or degenerative changes involving the gall-bladder or bile tracts; *c.* pathologic alterations in the composition of the bile, such as hypercholesterinæmia, etc., predispose to gall-stone disease.

5. Pregnancy is an important ætiologic factor in the causation of cholelithiasis.

6. The pathology of gall-stone disease complicating pregnancy is the pathology of gall-stone disease occurring in the non-pregnant. There may be present: *a.* inflammation of the gall-bladder or bile ducts in which one, two, or many calculi are lodged or impacted; *b.* a distention of the gall-bladder or

bile ducts by mucus, pus, or calculi; *c.* a pericholecystic inflammation, calculous in origin, leading to adhesion formation, to fistula formation, etc., and corresponding disturbances of function; *d.* changes in the liver; *e.* changes in the pancreas.

7. Some of the symptoms of gall-stone disease are due to the irritation inherent to the presence of gall-stones or to their migration through or impaction in the bile ducts or neck of the gall-bladder. Other symptoms are due to the concomitant inflammation of the gall-bladder, bile ducts and neighboring organs, causative of or resulting from the presence of calculi.

8. Rupture of a gall-bladder distended by calculi, by fluid, mucous or purulent in nature, can occur during gestation or during or immediately after labor.

9. In the differential diagnosis of this condition one should bear in mind:

a. that not infrequently gall-stone disease originates during or may complicate pregnancy;

b. that cholelithiasis and cholecystitis, owing to their reflex symptoms, are often mistaken for gastric disease;

c. that appendicitis and gall-stone disease frequently co-exist;

d. that digestive disturbances associated with acute pain and tenderness in the right hypochondriac region, with or without jaundice, with or without symptoms of biliary colic, are in themselves ample justification for operative exploration of the gall-bladder and ducts.

10. Cholelithiasis is a surgical disease; it calls for operative relief. Medicinal measures in this disease are merely palliative; appropriate surgical measures are curative.

11. Gall-stone disease in itself is never an indication for the artificial termination of pregnancy.

12. Whenever, for some cause or other, the abdomen is opened in women of the child-bearing age or past the child-bearing period, the gall-bladder and larger bile ducts should be examined, if it can be done without any or with only slight trauma of the tissues, without exposing the patient to too much additional risk, and without contaminating a clean peritoneum. Should the patient give a history of chronic digestive disturbances, the indication is absolute.

13. Women exposed to pregnancy and suffering from calculous cholecystitis or any other form of gall-stone disease, should be operated, the calculi removed, and the gall-bladder drained.

14. Pregnancy does not contra-indicate operations upon the gall-bladder or bile tracts. Peterson reported only 3 miscar-

riages in 23 reported operated cases. In only one (Roith) of the cases which we considered did abortion follow the operation.

15. It has been repeatedly demonstrated that the operative relief and cure of cholelithiasis does not unfavorably influence gestation on parturition. Icterus, whether acute or chronic, is a constant menace to the foetus.

16. Early operation is now, in proper hands, a safe procedure. It is an effectual cure of the symptoms produced by gall-stones; it has a low mortality and guarantees against serious complications in the future.

17. Cholecystostomy, cholecystectomy, and choledochotomy have been successfully performed upon pregnant women for the relief of gall-stones. After these operations, drainage is to be employed until the bile ceases to flow spontaneously through the wound, and until complete subsidence of whatever degree of cholangitis existed takes place.

18. The prognosis of operative intervention is not unfavorably influenced by the existence of pregnancy.

19. In persistent gall-bladder disease, the presence of casts and albumen in the urine is not uncommon, is not necessarily a bar to operative interference.

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PELVIC PAIN DUE TO UTERINE DISPLACEMENTS

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Rarely does a woman who is possessed of marked uterine displacement escape suffering, and the reason thereof is obvious. The uterus is a highly organized structure, abundantly supplied with nerves and blood vessels. When it is in its normal position and unhampered by adhesions its circulatory performance is achieved without disturbance, but the mere fact that it is so highly vascularized renders it unusually susceptible to grave disturbances when any factor obtrudes itself in the way of this blood current.

An eye ball that is congested, however slightly, is a constant source of pain, and no time is lost in seeking and removing the cause of the congestion. A congested testicle, because of the pain, soon renders a man unfit for work, but neither eye ball nor testicle are any more abundantly supplied with delicate nerve terminals than is the uterus. But because of the frequency of finding a displaced uterus, we are inclined to look upon it with more or less indifference, or to treat it in a rather perfunctory manner.

Let us take a brief view of the pathology resulting from a retro-displacement of the uterus. Whatever causes may have predisposed, we find the fundus of the uterus dropped backward into the posterior cul-de-sac, filling up more or less the hollow of the sacrum. It matters not, whether this is a retroversion or a retroflexion, the result is the same; namely, venous engorgement due to obstructive circulation. This engorgement produces an enlargement of the fundus, increased weight, more or less œdema, and eventually a hyperplasia.

As the body of the uterus becomes engorged, the endometrium sooner or later partakes of the same process, and this engorgement in a delicate structure such as the endometrium, soon produces increased menstrual flow that is likely to develop into menorrhagia.

But these are not all the changes which take place. The angle which is formed by the bending of the fundus upon the cervix is responsible for certain definite changes which take place in the wall of the uterus. The pressure at this angle results in atrophy of the under or posterior wall of the uterus, while the upper or anterior wall, stretched unduly because of the acute bending, soon gives evidence of compensatory hyperplastic development. The net results, therefore, of an exaggerated retro-displacement, are an enlarged fundus with thick-

ened walls, an engorged endo-metrium with hæmorrhagic tendency, and symptoms due to mechanical pressure on the strictures in the vicinity.

It is undisputably true that the peritoneal covering of any organ or structure that becomes congested has a tendency to throw out a secretion, which soon becomes an exudate and cements the affected organ to contiguous structures. It therefore follows that in the long run but few exaggerated retro-displaced uteri escape adhesions that hold them firmly in their abnormal positions.

The object of this paper is simply to call attention to the character of pain produced by these uterine displacements.

First, it might be stated that about 18 per cent. of all gynæcologic patients have uterine displacements. While every backache in woman is not caused by a displaced uterus, yet few women having a retroverted uterus escape backache.

The characteristic pain is low down in the middle line of the sacrum. It may be sharp and lancinating in character or dull and aching. It is quite distinct from the pain of a sacro-iliac strain, which is more to one side of the sacrum and is generally increased by any hip joint motion. Moreover, it is rare that any tender spot can be found in the region of the pain.

The continued engorgement of the uterus must of necessity produce pressure upon the nerve terminals and nerve tracts. This ere long leaves an imprint upon the nerve centers and must eventually exhaust nerve reserve. It is this constant nerve irritation which is responsible for many of the breakdowns that overtake sensitive women and leave them neurotic wrecks. In other cases the physical exhaustion consequent upon the constant dragging upon the pelvis spells semi-invalidism.

Following in the train of muscular and nerve exhaustion comes the pressure upon sigmoid and rectum. The engorgement of the uterus extends eventually to all of the pelvic organs, including the lower bowel, which, with the undue pressure exerted by a large fundus resting against the sigmoid or rectum, brings about constipation and thus adds further to the general discomfort and results in disfunction of those necessary avenues of elimination.

A wayward uterus seems a little akin to the wayward man who is not content to take the downward road himself, but insists upon taking others with him. Thus, a displaced uterus will in the majority of cases drag down with it one or both ovaries. A woman who is so unfortunate as to have one or both ovaries prolapsed between a big, boggy uterus and a constantly distended rectum, is surely an object for commiseration. She is rarely free from pain, except while lying upon her face or

taking the knee-chest position. These are the women who are driven nearly to desperation because of the ever-present pelvic pain.

If we add to the sum-total of these nerve-racking pains the usual accompaniment of retroversion, that of menorrhagia, we have a complete picture of the symptomatology of uterine displacement. The flooding which appears sooner or later takes a further toll from the distressed woman and brings her final collapse a little nearer. To make any attempt to stop the excessive flowing due to an engorged and displaced uterus, without reducing the size of the uterus and at the same time restoring it to its normal position, is wasted effort. The attention must be directed to the source of the trouble.

While there are certain quite definite symptoms which point with reasonable certainty to a retro-displaced uterus, there are other symptoms which point with equal directness to an anterior displacement of the uterus. These are bladder irritation characterized by frequent and painful urination with some tenesmus, generally a dysmenorrhœa, and not infrequently sterility.

Bearing in mind that the uterus lies normally antiflexed upon the bladder there may at times be some doubt in the mind of the medical attendant just how to distinguish the normal from the abnormal.

There are two points which will generally determine how far forward the fundus may fall before being classed as having fallen from grace and being antiflexed.

First, the position of the cervix. If it points directly backward toward the posterior fornix and persists in remaining in that position under manipulation, it is presumptive evidence that the fundus lies much lower upon the bladder than it should.

Second, if a distinct angulation can be felt at a point where the fundus joins the cervix it also is evidence that the fundus is bent acutely forward on the cervix and has become fixed in that position.

This condition is easily diagnosed by the bimanual method of examination and should leave no one in doubt as to the exact nature of the displacement.

No case of dysmenorrhœa should be treated without first ascertaining whether or not the uterus is acutely anti-flexed, and no treatment for sterility should be instituted without also determining not only the position of the fundus, but whether or not it is of infantile dimensions. Acute anti-flexion is quite likely to be a congenital defect, and with that defect there is generally present its logical accompaniment, an infantile uterus and consequent sterility.

I am induced to believe that a large majority of patients suffering from dysmenorrhœa due to an acutely anti-flexed uterus

can be cured by dilatation under ether anæsthesia, provided after-treatment be persistently carried out. Many a healthy and otherwise robust young wife has a breaking heart in disappointment over a childless marriage, merely because an infantile uterus that might be remedied by proper treatment has prevented conception.

Let me say just a few words regarding the pain produced by prolapse of the uterus. Rarely does uterine prolapse occur without a tear of the perineum and loss of tone in the uterine supports, although some time ago I operated upon a young girl 18 years old who had never been pregnant and yet who had almost complete procidentia. In procidentia uteri there is, first, pain over the middle of the sacrum, sacralgia it is sometimes called, pain and dragging about the loins, vesical tenesmus and straining at defecation. These painful symptoms are always increased by standing or lifting. Later, there is a sensation of a foreign body protruding from the vagina.

It is unfortunate that all women who have the first evidences of developing uterine prolapse cannot have the benefit of careful and intelligent gynæcological treatment, for by such measures they could in the majority of instances be quickly and safely taken from the large class of semi-invalids and be placed with the able-bodied.

The short time allowed for this session will not permit of the consideration of treatment for these maladies: suffice it to say that nearly all of them are curable by some one of three methods of treatment: first, topical and manipulative; second, instrumental; third, operative. The best results can be obtained by the employment of early treatment, yet even in the most exaggerated and chronic cases, operative measures are sure to be entirely satisfactory.

There is no better time or opportunity for overcoming an old-time retro-displacement than that afforded after the patient has been confined. The ligaments and uterus are then more susceptible to treatment, and the fundus can be materially reduced in size, by posture, hot douches, and tamponades, by having the mother nurse her baby and by keeping off her feet for a much longer period than is usual. Intercourse particularly should be forbidden for a long period of time following confinement. Assuming the knee-chest position daily for about a week or ten days after parturition will aid materially in coaxing the uterus out from the hollow of the sacrum into its normal position. Just as soon as this normal position of the uterus has been attained, just as soon begins a lessening of the engorgement and a more nearly normal circulation; and this improvement persists as long as the normal uterine position is maintained.

RESISTANCE IN TUBERCULOSIS

H. F. GAMMON, M.D.

Director Bureau of Publicity, Texas State Sanatorium, Carlsbad, Texas

Physicians often tell patients that they have good resistance. What are the determining factors of good or poor resistance? Will a study of nature's efforts to overcome tuberculosis infections help us in finding a cure or specific for tuberculosis? These are questions that confront the tuberculosis worker whether he be the general practitioner who sees relatively few cases of tuberculosis or the sanatorium physician who sees thousands.

When we realize from post mortem reports the prevalence of tuberculous infections that have been cured spontaneously by nature we are immediately impressed with the fact that nature may cure tuberculosis not only in the beginning stages but also when the disease is fairly well advanced. The next thought that we have is how to determine just how nature cures the infections, by what mechanical, physical or chemical changes in the economy or by what combination of changes. This is the big question which when answered will permit us to cure possibly many cases that are getting worse under our present limited methods of treatment.

A study of the tuberculous patient is of the greatest help, and, in fact, it is only by a study of the patient that we are able to determine what changes take place. The physician who has only one or two cases of tuberculosis a year must not feel that he cannot play a prominent part in the discovery of a cure. Indeed, he will play a very important part for the simple reason that he has followed his case for years and has treated it for different symptoms many of which are those of the beginning disease as he considers his case retrospectively.

The factors entering into the consideration of resistance are, first, the patient and, second, the infecting organism. Past observation has proved that the resistance in tuberculosis is cellular; therefore, we must consider the individual cellular units in a patient's makeup. Furthermore, past experiences have shown that the tubercle bacilli are of different virulence, and it is very evident from this that one patient may be very sick and still have better resistance in some respects than another patient who is apparently only slightly sick.

The work of Webb with guinea pigs proves beyond a doubt that resistance can be increased in these animals. Webb, by gradual injections of virulent bacilli, was able to inject as many as 1,500,000 live tubercle bacilli into a guinea pig at one time without producing disease, whereas 20 bacilli would ordinarily cause death of the animal if injected at one time.

In the tubercle, mechanical resistance plays a part through the fibrous tissue formations around the focus of infection. The reaction of the tissues to tuberculin injected into the tuberculous and the lack of such reaction in the non-tuberculous also are evidences of differences in the tissues of the tuberculous and the non-tuberculous. Complement fixation tests also prove the presence of developed substances in the tuberculous.

The physical evidence of antibodies or antitoxins is not lacking, but the chemical make-up of these substances is not known and is the solution of the whole question of nature's method of cure in tuberculosis. In a way, we know how to increase these bodies or substances, and thus we give nature a little help.

A chronic case of tuberculosis, if not active or, at least, if not exhibiting many signs of activity, is probably more resistant than an acute active case. The reason for this increase in resistance is that in chronic cases nature has helped mechanically by walling off the infected areas and also by sensitizing the body cells with tuberculin, with a consequent antibody production. What further proof of resistance does one need than that shown by the resistance of a moderately advanced case of tuberculosis who swallows millions of germs in twenty-four hours without any disease of the intestine developing? If this happened in a non-tuberculous person, such a massive infection would have resulted in death.

Any conditions which tend to cause a deviation from the physiological will decrease to a greater or lesser extent the resistance of a tuberculous patient. Such deviation may be due to mental troubles or physical difficulties resulting from intercurrent diseases, or to some very slight abnormality such as a toothache.

Often the physician must decide whether the complication, be it a nasal condition or an appendicitis, will decrease the resistance of the patient more than the shock and consequences of an operation. This is a very difficult question; but past experiences have shown that we should delay operation in these cases as long as possible.

A study of the mental make-up of the patient and correction of any mental aberration will often increase his resistance.

We may summarize the question of resistance by saying that in tuberculosis it is a relative condition. Inheritance, environment, intellect, habits, occupation, diet and meteorological conditions all have their part in deciding the resistance of a tuberculous patient.

CLINICAL DEPARTMENT

A SINGLE OBSERVATION OF RADIUM THERAPY

JOHN PRENTICE RAND, M. D., Worcester, Mass.

Patient, Mr. A., is a man about 60 years old. His mother died of carcinoma of the breast when he was 6 years old, and his maternal grandmother died of the same disease. A sister 7 years his senior also developed carcinoma of the breast which had been thoroughly removed as soon as it was discovered. That was four years ago, and to date there had been no recurrence. With such a family history the patient was naturally suspicious and afraid of cancer. For several years he had noticed a little scale, oval in shape, about the size of a hypodermic tablet, on the vermilion border of his lower lip. The scale was not in the least troublesome as far as sensations were concerned, but about once in three weeks it would thicken up and exfoliate leaving an apparently healed membrane beneath, which would in turn go through the same cycle. The patient had a premonition that at some time this scale would give him trouble, but he decided that as long as it did not grow worse he would not meddle with it, feeling that the wisest thing to do was to let it alone. Last February he noticed that when it exfoliated it seemed to leave the lip more sensitive than formerly, and a little later when the scale came off it took the membrane with it and left a raw abrasion the size of the original scale. In treating it, we at first applied local astringents such as tannic acid and glycerin, hoping to heal the lip in that way, but without success. Then we tried a dusting powder of aristol; this produced a scab that lasted about four days and then came off, leaving the abrasion a bit larger than before. At this juncture my patient consulted a local surgeon of large experience who felt sure that it was only an innocent lesion which would heal readily if thoroughly cauterized. Therefore, he touched it up with acid nitrate of mercury and awaited results. A black scar promptly formed which had the appearance of a healthy scab. This remained two days and then came off leaving an unhealed surface larger than before. On April 8, it was cauterized again, and the same succession of a scar and scab resulted. By this time the lesion had become about four times as large as it had been in the beginning, covering a surface now of about the size of a No. 6 sugar disk.

On the tenth of April, as my patient had business that took him to Boston, I advised him to see Dr. Geo. R. Southwick, who has had a large experience with the use of radium and the

X-ray in malignant growths. Dr. Southwick very kindly took the case under consideration and advised the use of radium to be begun at once. Accordingly, April 12, the patient received a half-hour treatment. There was a decided reaction from the treatment which did not become very noticeable until nearly a week later. The whole lip became congested, which, while not uncomfortable, was sufficient to keep the patient conscious that his lip was not quite normal. Probably his mental state of solicitude over his condition was a large element in the case.

To the eye of a novice in radium therapy it looked as if it were doing more harm than good. On April 24 the patient was given another half-hour treatment, this time over a little larger area.

On May 3 the reaction from the treatment had become so marked that it extended below the vermilion border of the lip and involved the true skin below. We tried to protect the abrasion from any injury as far as possible, so that the scab formed from the use of the radium would have a chance to remain undisturbed. This was accomplished by painting it two or three times a day with flexible collodion. Every day the exudate from the lip increased, and every day the scab grew larger until we had an exudate about six times the area of the original scale and of considerable thickness. On May 8 the patient visited Dr. Southwick again who did not wish to disturb the scab until it should come off of itself and he gave no treatment. The following day the unsightly scab came off smooth and clean, leaving a healthy surface or cicatrix beneath which was still very sensitive. We continued to paint the lip with collodion as before. On April 15, patient visited Dr. Southwick again who gave him no treatment but advised him to report again in about 2 weeks. On May 30 a short treatment of 10-15 minutes caused almost as decided a reaction as the longer treatments had done. Since then he has had no further treatments, and his lip seems firm and healthy today.

EDITORIAL

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THE INFLUENZA EPIDEMIC

It would be most premature to draw any sweeping conclusions from this scourge with our present data, although many features of interest already are presenting themselves. Since Pfeiffer's discovery of the Gram-negative organism bearing his name and attributed by him as having causal relation to the disease, the scientific world has taken his contention for granted. The bacteriologic investigations of this latest pandemic, drawn from many parts of the civilized world, are far from being in accord respecting the nature of the infective agent. Those observers reporting the isolation of the Pfeiffer organism have for the most part found it mixed with many other varieties, such as various types of streptococci, pneumococci, micrococcus catarrhalis, and even spirochætes. By some it has been found in the lungs at autopsy, but was not discoverable in the sputum. Many observers have failed to locate it in either place, but instead report most commonly some member of the streptococcus-pneumococcus group. Even Pfeiffer himself is alleged to have failed in its isolation from cases of this epidemic. Nicolle is reported to have found a filtrable virus with which he reproduced the condition in monkeys, while Rosenau has failed in attempts in this direction. Such diversity of opinion can only place the ætiology of the condition *sub judice* for the time being, but in addition it causes Pfeiffer's original contention to be scrutinized more closely.

Briefly, his evidence lies mainly in the isolation of a small Gram-negative cocco-bacillus from the sputum of a large number of cases, in some of which it was found in pure culture.

But it should be noted that attempts to reproduce the condition in animals was not particularly successful. The ætiologic status of this organism is comparable to that of *B. suispestifer* in its supposed relation to hog-cholera, before it was conclusively shown that a filtrable virus was the actual cause of the condition.

If we carry this analogy further we might hypothecate that influenza is induced by an unknown infective agent, and complicated according to circumstance with such secondary infections as *B. influenza*, streptococci, pneumococci, or some other organism. Not only would such a conception be comparable with what we know to be true in hog-cholera, but also with what we conjecture to be true in scarlet fever and measles. It cannot be said with finality, therefore, that we have isolated the infective agent—in fact, it would seem that we have *not* done so.

Still more discouraging is the inability of the profession to treat the disease. It is yet to be shown that vaccins have any value, either prophylactically or therapeutically, although claims for their efficiency are not lacking. Vaccins thus far used have consisted of pure cultures of influenza bacilli as well as of mixtures of this organism with various other ones already mentioned. The uncertainty associated with the possible ætiologic rôle of any known organisms makes their employment in vaccins an empirical procedure. Apparently good effects resulting from their use in some cases may be non-specific after the manner of non-specific protein injections in rheumatism.

Among the many therapeutic agents used, one hears little of homœopathic treatment, but in this city (Rochester, N. Y.) the impression prevails in some quarters that patients on the whole have fared better under homœopathic than under “regular” treatment. Three men claim that of three hundred and seventy-five odd cases under their care, no deaths have resulted, and a very low percentage of pneumonias occurred. It may be argued that we do not know how many of these cases were true influenza and how many just common colds, but it is fair to assume that in the midst of a raging epidemic a generous percentage of them conformed to the clinical entity known as influenza. One leading allopathic physician reported a mortality of 25–40 per cent of his cases, under 40 drop doses of the tincture of digitalis every four hours. We may conjecture, if we do not know, that such dosage is the result either of ignorance or a hysterical state of mind resulting from a consciousness of therapeutic impotence.

These instances are not related for the purpose of drawing conclusions nor for the purpose of holding a brief at this time for the superiority of any form of therapy, be it vaccins, con-

valescents' serum, or drugs; but the opportunity is presented for those treating large numbers of cases to report their findings, if records were kept. Such a widespread epidemic will make such reports of much greater value than those of a few cases covering several seasons. It is only from thousands of cases that we can finally arrive at some estimate of the worth of the various therapeutic agents employed. It is to be earnestly hoped that the reports will contain the data necessary for their scientific employment, inasmuch as so many case reports must be regarded only as anecdotes.

In conclusion it must be admitted that we know little that is definite and certain at this time regarding either the ætiology or the treatment of influenza.

RALPH R. MELLON.

CORRESPONDENCE

To the Editor:

Since writing you about my success in treating influenza, a second epidemic occurred here, during which I treated 105 cases. In this series there were no deaths and no cases of pneumonia. My experience with the two epidemics may, therefore, be summed up as follows:

Total number of cases	293
Cases seen from initial fever and recovering without developing pneumonia	274
Relapsing cases	19
Pneumonia (developing in relapsing cases only)	6
Deaths from influenza and its complications	3

Very sincerely yours,

ARTHUR B. HAWES, M.D.

BRIDGEWATER, S. D.
December 27, 1918.

REVIEWS

HOMŒOPATHIC PERIODIC LITERATURE

The Clinique, October, 1918

1. *X-ray treatment of fibroid tumors.* 409. Grubbe, E. H.
Conclusions:

"X-ray treatment of uterine fibroids is, when properly carried out, a safe and efficient method of treatment.

"The danger incident to surgical operation need not be considered when the patient is under X-ray treatment. With modern methods all danger has been eliminated.

"Hæmorrhage, usually the chief symptom of uterine fibroids, can be controlled by this treatment.

"If, in a given case, it is deemed desirable to stop menstruation, this can be brought about by X-ray treatment.

"The tumors gradually decrease in size.

"Pain, usually due to pressure from the tumor, is relieved as the tumor shrinks.

"There is marked improvement in the general health of the patient.

"Because of its painlessness, bloodlessness and comparative safety, many patients will welcome X-ray treatment when they will refuse other treatment."

2. *Salpingitis and its treatment.* 412. Plank, T. H.

Seventy-five per cent. of cases of salpingitis are due to gonorrhœa. The treatment of severe acute septic salpingitis comprises rest in bed, starvation diet (which means absolutely no water as well as no food *per orem*), hot fomentations to the lower abdomen, continuous hot douches. A Sand's douche tube and water at 120-125 F. should be used, and the douche continued for from two to four hours, with one to two hours intermissions. Proctoclysis at a rate of not over 60 drops per minute aids elimination and stops thirst, and Fowler's position keeps the infection in the pelvis and thus retards absorption of toxins.

3. *The management and treatment of organic heart disease.* 418. Gordon, A. H.

"The drugs used in organic heart disease are many and various. Digitalis is the most effective and most dangerous remedy. I believe more people have been killed than cured by it."

Homœopathic medication may be useful when all other remedies fail. Two case reports to illustrate this are appended.

4. *Essential symptoms.* 423. Senseman, M. I.

5. *The spirit of research among our medical students. How may it be increased?* 428. Hastings, W. A.

6. *Anæsthesia in labor with special reference to prognosis.* 431. Costain, T. E.

The Pacific Coast Journal of Homœopathy, December, 1918

7. *General observations on influenza.* 597. Ward, J. W.

Ward treated 182 cases of influenza, 24 of which were pneumonia. All of the influenza cases recovered. Homœopathic remedies, prescribed according to indications, were used in the following order of frequency:

Gelsemium 3x controlled cases with fatigue, chilliness, moderate fever, sneezing, watery coriza, no or slight thirst, yawning, drowsiness but often with sleeplessness, dull aching

in limbs and joints, banded feeling around the head or occipital fulness.

Eupatorium perfoliatum 3x: Where marked chill was followed by fever of 103 to 105 degrees. Pulsating frontal or occipital headache. Intense aching in back. Deep bone aching. Nausea and vomiting. Larynx rough, scraping sensation produced cough. Oppression of chest with soreness.

Bryonia 1x: Much chilliness, frequently with heat in the head. Flushed face and much thirst. Heat more internal. Transient sweats of single parts. Dry cough which yields to blood-specked expectoration. Stitches and constrictions of chest. Pressure on sternum. The symptoms all aggravated by motion. Faintness on motion. Soreness and heaviness of chest. Desire but inability to take deep breath.

Belladonna 3x: Internally cold with burning external heat; heat predominating. Desires to be wrapped warmly. Sweat mostly on face or on covered parts, coming and going. Pain in head and eyeballs. Eyes sensitive to light. Fulness, pressure and shooting pains. Throat dry and sore, especially on the right side. Tongue has white center and red edges. Breathing is quick and short. Cough dry. Laryngeal dryness and tickling. Violent cough with taste of blood.

Aconite 3x: Was rarely indicated. Indicated for high fever, restlessness, anxiety, thirst and chilliness aggravated by least covering.

Ferrum Phosphate 3x: When chest symptoms developed early, giving of ferrum phosphate early did marvels to restore. Especially indicated with spasmodic, loose cough, aggravated at night. Mucus in throat and rattling. Expectoration scanty and often tinged with blood. Hammering pain in forehead and temples. It controlled every case of epistaxis.

Iodin 3x: Incipient pneumonia. Cough violent with burning and stitches in chest. Expectoration of bloody mucus. Salty taste. Sense of chest weakness. Fever high, with thirst, restlessness, pulsating headache. Face red. Always preceded by a shaking chill. In one case it promptly controlled a temperature of 105° F., with the above symptoms, in serious organic heart involvement.

Phytolacca 1x: In the rhino-pharyngeal group. Flow of mucus from one nostril or other. Throat sore. Worse on right side. Sense of left-sided plug. Severe angina with great difficulty in swallowing. Burning, smarting fauces. Great thirst. Shooting pains in lower extremities. Pains passing along Eustachian tubes to ears during deglutition.

Guaiacum 3x: Pain in throat and left ear. Throbbing and stitches in external head. Fever slight, following much chilli-

ness. In the cases requiring this remedy no other symptoms where present.

Hepar sulphur 6x: To clear up loose cough which often persisted after other manifestations disappeared. Hoarse, loose, choking cough; worse on getting cool. Aggravated by draughts, by cool air, by talking. Chest feels weak and coughing fatigues. Mental irritability with great sensitiveness to cold air and other external impressions.

Phosphoric acid 3x: Night sweat with thirst, mostly in occiput and neck. Aggravated from uncovering. Sense of faintness after eating, with desire to lie down.

Lycopodium 12x: In two cases of typical pneumonia it saved life where hepatization zones remained unresolved. Cough dry at night with profuse sputum by day, rust-colored or yellow. Rattling. Chest seemed full of mucus. The prompt results from this remedy were startling. It was given while the temperature was 104° F. In another case of throat angina where slight pathology seemed present yet much pain upon deglutition.

Tuberculinum 30x: Relapsing cases. In two cases of pneumonia in the advanced stages where recovery seemed impossible. The patients were thin, weak, and had afternoon hectic flush. Unresolved consolidated area in upper right lung. One day's use served to inaugurate prompt recovery. After its intercurrent use, another remedy completed the cure.

Silica 6x: Where the cough failed to yield. Sputum: mucus, purulent, often profuse. Suprasternal irritation. Harsh respiration, short and panting. Stitches in chest through to back. Hands and feet sweaty. Patient always chilly.

Sulphur 30x: As an intercurrent remedy. In one case of double pneumonia where no progress was being made, there developed hot soles and palms. Heat flushes. Changing position of feet to find cool place in bed. Hunger spells with repletion after eating a little. It was given with no special regard to chest symptoms, but immediately within 24 hours the chest symptoms began to clear up.

Nux vomica 3x: In right-sided tri-geminal neuralgia. Excruciating paroxysm, the patient having to be held in bed during the pain. Aggravated by slightest jar of bed or walking across the floor. Relieved by hot applications. The remedy was used in ten-minute doses to meet this manifestation as a sequel to influenza and gave relief in an hour after the suffering had lasted for many hours.

Natrum muriaticum 6x: Proved a specific in case of a boy of 8 years whose temperature had resisted bryonia. Each morning from ten to eleven an internal chilliness developed

with very cold hands and feet, finger-nails blue, thirst and severe frontal headache and at times vomiting. After one day's use it began to improve and the third day it was gone. All other symptoms then disappeared, requiring no other remedy.

Persistent lumbo-sacral pain usually called for *antimonium tartaricum* 6x or *Rhus toxicodendron* 6x; the sterno-cleido-mastoid rigidity for *bryonia* 3x; gastro-intestinal pain and loose stools for *nux vomica* 6x; epistaxis and supra-orbital right-sided neuralgia for *ferrum phosphate* 3x; purpuric spots resembling bruises in various parts for *lachesis* 8x. Persistent sciatica yielded to *kali* 6x.

It was noteworthy that when no medication had been employed before the homœopathic treatment was begun, the response to care was prompt. The more aspirin, codein, Dobell's solution and other extra-homœopathic medicines were used, the slower was the recovery.

8. *Sleep without narcotics.* 602. Talcott, S.

Actea racemosa is invaluable for the production of sleep in drunkards and opium addicts, and also in those who are suffering from the effects of protracted muscular strain. The symptoms are: intense prostration and pain in the basal region of the brain, which pain may extend to the nape and shoulders. Mentally there is a sense of crushing depression.

Arsenicum is useful in insomnia accompanying blood degeneration and malnutrition with nervous exhaustion. The restlessness of arsenic is due to anæmic irritability, whereas that of aconite is caused by "erythistic hyperæmia."

Baptisia overcomes the quiet but persistent wakefulness of those suffering from profound melancholia.

Gelsemium has a somewhat similar form of sleeplessness; that is, the patient is quiet, dull and stupid, yet he fails to sleep.

Veratrum viride, unlike *baptisia* and *gelsemium*, has intense restlessness. In this respect it resembles aconite, but differs from it in being quarrelsome and cross, aconite being full of fear and apprehension. It is useful in sleeplessness of acute fevers, puerperal mania, and epilepsy.

Belladonna is efficient in cerebral hyperæmia.

Hyoscyamus has symptoms similar to those of *belladonna*, but not its intense cerebral congestion. It stands midway between *belladonna* and *stramonium*.

Hypericum is useful after nerve injuries.

Ignatia is the remedy for sleeplessness due to grief.

Nux vomica is especially applicable in cases of recent debauchery and gluttony and of hard study and sexual excesses.

Phosphorus, five drops of the tincture in half a glass of

water, given in teaspoonful doses every half hour during the evening, and followed by a bowl of hot soup or a cup of beef tea at bed time, will gradually relieve the pain and restlessness of brain fag.

9. *Ignatia*. 611. Wheeler, C. E.

10. *What do you really know about healing the sick?* 616. Jones, E. G.

The Journal of the American Institute of Homœopathy, December, 1918

11. *The evolution of the therapeutic specialist*. 613. Rowland, J. E.

12. *Pneumonia*. 620. Duncan, C. H.

13. *The closure of wounds*. 631. Kinne, B. E.

14. *Obstetrical practice: some commonplace aspects*. 639. Peckham, H. C. VanB.

15. *Maternity supervision: Ohio's contribution*. 643. Humphrey, W. A.

16. *Diet in hypertension*. 645. Smith, G. E.

17. *The necessity of a cycloplegic in refracting myopes*. 655. Watts, H. A.

18. *Glaucoma congenitalis*. A successful surgical outcome. 656. Hallett, DeW.

19. *Chicago League of the Hard of Hearing*. 660. Herdman, M. M.

GENERAL MEDICINE

The antisyphilitic triad. Jessner, L., *Urologic and Cutaneous Review*, 1918, xxii, 690.

In the treatment of syphilis mercury is most efficiently used in the form of inunction or intramuscular injections of soluble salts. J. uses "*Mitinum mercuriale*, in which the contained mercury is broken up into smallest particles." 3 to 4 grams of this are rubbed into the skin in 5 to 10 minutes, and during a course of inunctions adult patients receive from 90 to 150 grams, and children, according to age, get $\frac{1}{2}$ to 1 gram at each rubbing or 15 to 150 grams during the entire treatment. The rubbings should be administered in the evening before the patient retires, because it has been shown that the beneficial effects of inunctions are not due to dermal absorption alone, but also to inhalation of mercurial vapor emanating from the rubbed area. The warmth of the bed favors vaporization of the mercury, and the undisturbed mercury-laden atmosphere surrounding the sleeping patient insures maximum inhalation

of the drug. Definite instructions for the rubbing should be given, and different portions of the body should be selected on successive nights, thus:

- First evening: left leg
- Second evening: right leg
- Third evening: left arm
- Fourth evening: right arm
- Fifth evening: breast and abdomen
- Sixth evening: back

"On the seventh evening the patient stops the treatment, visits the doctor, and takes a warm bath. On beginning again, the same instructions are followed. Daily the mouth is washed four times with a solution of chlorate of potash (20 grams to $\frac{1}{2}$ liter of water) which is not to be swallowed. Teeth should be brushed morning and night with a chlorate of potash paste. No smoking. Live quietly."

Clinical observations on influenza. Fantus, B., *Jour. Am. Med. Asso.*, 1918, lxxi, 1736.

"There is every reason to believe that, within a few weeks of its onset, the infection was universally present in the nose and throat of the people. . . . Among those who escaped well marked sickness there are few who could not recall having had an occluded or running nose, or a raw feeling in the throat, or a cough, or aches and pains, at some time during the prevalence of the disease." That blood relationship seemed to influence susceptibility is suggested by the fact that all members of some families were stricken, whereas in other families there was not one definite case, although exposure had taken place.

"During this pandemic, wearing of face masks had no greater prophylactic value than the liberal consumption of whiskey that was indulged in by some for this purpose." The uselessness of face masks is explained by the fact that they did not protect the eyes, from which contagion travels to the nose by way of the tear ducts.

"Every case of pneumonia that I observed . . . was apparently due either to inability or unwillingness, on the part of the patient, to stay in bed long enough or thoroughly enough, or to physiologic handicaps, such as pregnancy, organic heart disease, chronic bronchitis, infancy or old age." Patients who were in bed continuously from the beginning until they had been perfectly well for two or three days, seemed to be immune to pneumonia. This is probably due to the fact that warmth favors the establishment of immunity, and chilling, especially when wet with perspiration, militates against its development

"In nearly every instance of about twenty-five cases of broncho-pneumonia seen for the first time after the establishment of this complication, there was a history of incomplete bed treatment; and in some, considerable evidence that the physician previously in charge had used an opiate."

Splanchnoptosis: its cause, prevention and cure. Kreider, G. N., *Jour. Am. Med. Asso.*, 1918, lxxi, 2036.

The stomach and transverse colon, as shown by röntgenographic and fluoroscopic examination, only rarely lie in the position that has long been considered normal for them.

Improper habits of eating and failure to rest after meals conduce to ptosis, as does also the wearing of corsets, belts and high-heeled shoes.

Mucous colitis must no longer be considered a neurosis, but rather the result of coloptosis, and the cause, rather than a mere accompaniment, of neurasthenia, hysteria, and other neuroses.

Rest in bed for six weeks and forced feeding, followed by postural therapy, graded exercise, and proper bandaging, will relieve most cases. The foot of the bed should be raised about 12 inches. At least five meals a day must be taken. The bandage used by K. is the *Comfort U*, made for him by E. J. Fayart Co., of Springfield, Ill. Rest in recumbent position for an hour after meals should be persisted in after the period of complete bed rest is over. During this rest, the clothing and bandage should be loosened and the foot of the couch or bed elevated. Light gymnastics, tending to improve the tone of the abdominal muscles and the diaphragm, may be undertaken in due time. K. advises lying with shoulders on the floor and hips on a couch, hanging by the knees from a horizontal bar, golf, croquet, tennis, etc.

Rovsing's operation of gastropexy may be tried if the above fails, but Lane's operation of partial colectomy is rarely indicated.

The value of modern blood chemistry to the physician. Gettler, A. G., and St. George, A., *Jour. Am. Med. Asso.*, 1918, lxxi, 2033.

Extremely high retention of nitrogenous substances in the blood spells renal involvement, either primary or secondary, but small increases in the retained nitrogenous waste is found in numerous other diseases and conditions. Persistently high blood sugar means diabetes or a tendency thereto; and this increased blood sugar is found in very early stages of diabetes when sugar has not yet appeared in the urine. A low alkali reserve means acidosis.

By eliminating from the diet the particular kind of food responsible for the retained end product, good therapeutic results are often obtained. Thus, in carbuncle, the blood sugar content is usually high; and by limiting the ingestion of carbohydrates the carbuncles often clear up quickly.

In threatened eclampsia an increased amount of retained nonprotein nitrogen bodies in the blood indicates the course of treatment to be followed. The amount of retention is a safe guide as to the speed with which the uterus should be emptied.

MEDICINE IN ASIA MINOR

JERUSALEM (*By Mail*).—How American Red Cross physicians engaged in relief work here are accomplishing worth while results in the face of great difficulties, and what they are up against, is shown in a report just received here from W. S. Dodd, A.R.C. doctor, working at Mejdcl in this section.

With two capable English trained nurses and three native helpers, more or less useful, Dr. Dodd, his "hospital" housed under tents, performed 252 operations in seven weeks, besides giving medical examinations, treatment and counsel to hundreds of the destitute inhabitants and refugees.

His report says in part: "The work of the Hospital was of the plainest sort; it might be called primitive. About twenty-five tents comprised the Hospital proper, with a Dispensary tent, and tents for the living quarters of the staff.

"The soil was all the purest sea-sand with thistles and scant grass; going barefoot was the universal custom, and in our own quarters we of the staff used to follow that custom with great pleasure. . . .

"The professional side of the work was of the greatest interest to me and every day was a pleasure. The clinics numbered sixty to a hundred a day. Of course we had all classes of cases in medicine and general surgery, but by far the larger proportion of our patients were eye-cases.

"Of the 252 operations that I did in less than seven weeks, 222 were for the eyes. This is the number of persons operated on, most of them having more than one operation, perhaps on all four lids, so that I really operated on 408 eyes.

"There were some cataracts, not more than would be seen in the same number of cases elsewhere, but trachoma and its consequences accounts for almost all of the eye troubles in this land. I set out to treat these cases radically and secured fine results when I could keep the patients long enough for a reasonable after-treatment. But even so, the number of eyes that can be saved from partial and total blindness is large, and the economic value of each eye thus saved is enough to make the prosecution of this line of work of the greatest importance for the redemption of the land.

"The accident cases are always interesting. I had the last end of treatment of some cases of bombed hands, of which there had been quite a number in the earlier days. These were largely in children, and were due to their picking up unexploded Turkish bombs that were lying in the fields from the time of the British advance in the Gaza region. Many fingers and even hands were lost from this cause.

"Vermin was the great enemy we had to fight. Fleas were hardly counted as a problem because we could do nothing against them, they were everywhere and inevitable, and so far as we know at present not being the carriers of any special disease, did not come within the hostility of a medical conscience.

"Lice and maggots were a daily terror. How many wounds and injuries came to us filled with maggots I cannot tell. A favorite dressing for a wound is a piece of raw meat, a breeding-place for maggots, and they can hardly be blamed for invading the adjoining premises.

"Many a child had to be put under chloroform in order to search out and pull from their hiding places deep in the middle ear a half dozen wriggling maggots whose every motion was causing torture to the innocent victim.

"A woman came to the clinic complaining of headache. A single sore on her face led to questioning, and when she rather unwillingly undid her turban we found an exaggerated case of impetigo, and every separate sore was as if the whole thickness of the scalp down to the bone had been punched out, and every sore was a nest of maggots. I removed 60 at the first seance, and at the first dressing next day the nurse had more to do. The headache was cured without further treatment. And these are not the most loathsome cases that we saw.

"Another great difficulty with which we had to contend was the filthy habits of the people. In spite of providing proper sanitary facilities, we were compelled to have a scavenger go around every morning and clean up the filth from around the tents of the patients. The women were as bad offenders as the men. We made it a rule that anyone known to have violated these simple sanitary regulations must go without their dinner next day, and this was quite an effective punishment."

FOR BETTER RURAL HEALTH

Much remains to be done in rural districts, according to the annual report of the Secretary of Agriculture, to control such pests as mosquitoes and the hookworm, to eliminate the sources of typhoid fever, and, even more, to give the country districts the advantage of modern hospitals, nursing and specialized medical practice.

Noting that many agencies, some of them private enterprises with large funds, are working for improvement, the report says that the Department of Agriculture, through its home demonstration service, is giving valuable aid, and the public health service is increasingly extending its functions.

To what extent the further projection of effort is a matter for State or local action remains to be determined, says the Secretary, but it seems clear that there should be no cessation of activities until there has been completed in every rural community of the Union an effective sanitary service and, through the provision of adequate machinery, steps taken to control and eliminate the sources of disease and to provide the necessary modern medical and dental facilities, easily accessible to the mass of the people.

The Council of National Defense authorizes the following:

How the civilian physicians of the country have been readily responding to the call of the United States Public Health Service for medical aid in the districts most affected by the epidemic of influenza is reflected in two letters, written a week apart to the President of the Central Governing Board of the Volunteer Medical Service Corps of the Council of National Defense. On September 27, Surgeon-General Rupert Blue of the United States Public Health Service requested the co-operation of the Volunteer Medical Service Corps in the following letter:

*The President,
Central Governing Board,
Volunteer Medical Service Corps,
Council of National Defense,
Washington, D.C.*

September 27, 1918.

Sir:

In view of the present epidemic of influenza which, if it spreads at the same rate as heretofore, will practically cripple the industries of the country, I have the honor to request that steps be taken to mobilize fifty units of the Volunteer Medical Service Corps, each consisting of ten physicians for emergency service in connection with the prevention of, and relief from, this disease. Such units upon mobilization will be directed to report to officers of the Public Health Service placed in charge of this work.

For the present, the salaries and traveling expenses of these physicians will be borne by the American Red Cross. The salary in each case will be \$200 per

month in addition to the reimbursement of their traveling expenses, and maintenance.

Anything that your Board may do in this present emergency to mobilize and place at the disposal of the Public Health Service and the American Red Cross such medical units will be deeply appreciated and will serve to demonstrate the value of the recently created Volunteer Medical Service Corps.

Respectfully,

(Signed) RUPERT BLUE,
Surgeon-General.

The names of the five hundred doctors asked for were furnished within seventy-two hours. Three days after the first call, another request for five hundred doctors was received from the Public Health Service, and on October 1, the names of 1,135 physicians had been furnished, from whom more than the necessary number were obtained. On every day since, additional names of volunteers have been coming in, and they have been sent to Surgeon-General Blue, for his reserve list.

The officers of the Public Health Service expressed gratification at the prompt response from the Washington headquarters of the Volunteer Medical Service Corps, and also for the replies which were being received from doctors in many parts of the country, and on October 4, Surgeon-General Blue sent the following letter of appreciation:

October 4, 1918.

*The President,
Central Governing Board,
Volunteer Medical Service Corps,
Washington, D.C.*

Sir:

I take pleasure in informing you that the officer in charge of the measures for combating the present epidemic of influenza in New England has stated by telegram that the number of doctors who have already reported for duty are sufficient to meet the needs of the situation in those states.

As you know, these doctors were obtained through the co-operation of your office, and it is most gratifying to certify in this way to the prompt response given by your office to our requests for medical assistance. This is an instance which serves to demonstrate the value of the organization of the Volunteer Medical Service Corps in a National emergency like the present.

Respectfully,

(Signed) RUPERT BLUE,
Surgeon-General.

Surgeon-General Blue also wired on that day to all State Health Officers as follows:

"Public Health Service will mobilize with aid Volunteer Medical Service Corps all outside medical aid required in combating present influenza epidemic. Red Cross, upon specific request from this service, will mobilize nursing personnel and furnish necessary emergency hospital supplies which cannot be obtained otherwise. Inform all city and county health officers your State that all appeals for aid must be made to State health department, which will make request for Surgeon-General, Public Health Service, whenever local needs require. Whenever necessary, Public Health Service will establish district officers to co-operate with State officials and distribute medical and nursing personnel."

Officials at the headquarters of the Volunteer Medical Service Corps are gratified that the organization was able to meet the emergency in this way, fulfilling the purpose for which it was created, namely, to place on record and classify information as to civilian physicians, so that a request for aid voiced by a government department could readily be supplied.

TREASURY CERTIFICATES TO BE ACCEPTED IN PAYMENT OF INCOME AND PROFIT TAXES

BOSTON, MASS., December 24.—Instructions have been received by Collector of Internal Revenue John F. Malley to accept Treasury certificates of indebtedness dated August 20, 1918, maturing July 15, 1919, and Series T, dated November 7, 1918, maturing March 15, 1919, at par, without interest, in payment of income and profits taxes.

The Department has advised the collector that accrued interest on the certificates will be paid separately by the Federal Reserve Bank to taxpayers upon deposit by the collector of the certificates accepted, showing the date the tax was due and the name and address of the taxpayer.

In like manner interim certificates issued by the Federal Reserve Banks representing Treasury certificates will be accepted in payment of income and profits taxes.

OBITUARY

DR. REUBEN A. ADAMS

Dr. Reuben A. Adams, a man to whom high professional distinction had come and as a veteran of the Civil War honored by the state and national bodies of the Grand Army, died yesterday at his home, No. 3 Upton park, aged 77 years. As a crowning honor in his professional career he was elected president of the American Institute of Homœopathy at its annual meeting in Baltimore in June, 1916. He leaves two sons, John Adams, of Orange, Cal., and Sidney I. Adams, of Rochester; two brothers, Dr. Myron H. Adams and Seth Adams; two sisters, Mrs. Louise Snyder and Mrs. Helen Gilbert, of Marion, and a granddaughter, Elizabeth Fiske Adams, of Rochester.

Dr. Adams, who sprang from a noted New England family, was born at Marion, N. Y. on April 3, 1841. There he passed his boyhood and attended public school and Marion Collegiate Institute. In August, 1862, he enlisted in Company D, 160th Regiment, New York Volunteers, and went to New Orleans with General Bank's expedition, serving under him throughout the Louisiana campaign, including the siege of Port Hudson. Later he fought under General Sheridan in his engagements in the Shenandoah valley, participating actively in fourteen battles in all. He was wounded at Fort Bisland, Louisiana, and Cedar Creek, Virginia.

HIGHLY PRIZED POSSESSION

When he was mustered out of service at the close of the war, Dr. Adams received the exceptional honor of a letter of commendation signed by every surviving officer of his regiment. He received rare and valuable presents and thanks from the imperial household of Japan for service to a prince and officer of the Japanese navy and army; but this letter he prized above all similar things he possessed.

On returning from the war Dr. Adams took up his medical studies at the Homœopathic Medical College of Pennsylvania and was graduated from the Hahnemann College of Philadelphia on March 4, 1868. In July of that year he established himself in Churchville, where he practiced his profession successfully until May, 1873. Ambitious for a field presenting greater possibilities, he then moved to Rochester, where he soon took rank with the most prominent physicians. In 1874 he served as city physician, being one of the first Homœopathic physicians to occupy that position.

OFFICER OF MEDICAL SOCIETIES

The doctor served as president of the Monroe County Homœopathic Medical Society, vice-president of the Rochester Hahnemann Society and vice-president of the New York State Homœopathic Medical Society. He was a member of the New York Homœopathic Medical Society and of the American Institute of Homœopathy, and was consulting physician on the staff of the Rochester Homœopathic Hospital from its incorporation in 1887.

He was a member of George H. Thomas Post, G. A. R., and was proud to have taken part with that post in the original presentation of a United States flag to each of the thirty-five schools of Rochester, thus starting a patriotic custom that has extended pretty generally over the United States.

Dr. Adams was a member of the Monroe Commandry, Knights Templar, and Rochester Consistory, in which he had taken the thirty-second degree in Masonry. He belonged to the Genesee Valley Club and various other professional and business organizations.

OWNED FARM AND ORANGE GROVES

Dr. Adams was long an aggressive and conscientious worker for the advancement of homœopathy. In his work and words he was an effective advocate and uncompromising defender of his medical faith. For more than twenty-four years he occupied an office in Fitzhugh street. Later he had an office in the Powers building, though taking time to direct the general management of a large grain farm in North Dakota and orange groves and English walnut orchards in Southern California.

Dr. Adams leaves a valuable collection of de luxe volumes. This was a hobby with him, and his collection contains some rare and beautiful editions.

Dr. Adams was twice unanimously elected medical director of the Department of New York, G. A. R. At the forty-ninth annual encampment, held in Washington in September, 1915, he was unanimously elected surgeon-general of the Grand Army.

(From the *Rochester Democrat and Chronicle*, December 10, 1918.)

RECENT DEATHS

Gardner Holway Osgood, a graduate of Boston University School of Medicine in 1909, died, at the age of 39, in the Evans Memorial, October 18, from pneumonia following influenza. Dr. Osgood was roentgenologist of the Massachusetts Homœopathic Hospital.

Louis W. Salvin of Boston, a graduate of Boston University School of Medicine in 1914, aged 31, died in the Massachusetts Homœopathic Hospital on September 29, from pneumonia following influenza.

Hezekiah W. Brant of Geyser, Mont., a graduate of Hahnemann Medical College of Chicago in 1888, aged 62, died at his home on October 31, from influenza.

Christian Zbenden of Toledo, Ohio, a graduate of Homœopathic Medical College of Cleveland in 1882, aged 72, a member of the staff of Toledo Hospital, died in that institution on October 31 from pneumonia.

Francis M. Hyatt of Auburn, N. Y., a graduate of Hahnemann Medical College of Philadelphia in 1873, aged 71, physician to the Auburn City Hospital, died at his home on October 31.

Lieut. Clarence Howarth White, M.C., U. S. Army, of Cohoes, N. Y., a graduate of University of Michigan, Homœopathic Medical School in 1909, aged 30, is reported to have died in a military hospital in France on November 12, from pneumonia.

Thomas Lindsley Bradford of Philadelphia, a graduate of Homœopathic, Medical College of Philadelphia in 1869, aged 71, author of several books and monographs on homœopathy, librarian of Hahnemann Medical College, Philadelphia, died at his home on December 3.

Thomas Y. Perkins of Clifondale, Mass., a graduate of Boston University School of Medicine in 1901, aged 45, died at his home, December 6, from heart disease. Dr. Perkins specialized in diseases of the eye, ear, nose and throat.

David Frank Hallett of McCool Junction, Neb., a graduate of Hahnemann Medical College, Chicago, in 1878, aged 63, died November 30, after having been stricken with cerebral hæmorrhage a week previously while making a professional call.

THE NEW ENGLAND MEDICAL GAZETTE

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ORIGINAL COMMUNICATIONS

VENEREAL DISEASE CONTROL AMONG WOMEN

MARY R. LAKEMAN, M.D., Boston, Mass.

Epidemiologist, Subdivision of Venereal Diseases of the Division of Communicable Diseases, Massachusetts State Department of Health

I am going to take exception at the start to the subject you are looking for me to speak on. My sex has long been clamoring for "rights and privileges." Now the time has come for us to assure ourselves that man comes to his own on this question of venereal diseases. In some of the programs proposed in this campaign, we see too clearly a tendency to let this great war on venereal disease, "the enemy at home," resolve itself into a mere hunt and run-to-cover of the poor little hunted animal we call a prostitute. The pushing of one line of attack at the expense of all others will never win this war of venereal disease control; we must attack the whole problem broadly, striking on all sides at once, for this war will by no means be won when the last red-light district is closed or when the last prostitute now on the streets is safely shut up in a reformatory or in an isolation hospital. Prostitution is a business, and as long as there is demand a supply will be created to meet that demand. Education must remain the most powerful weapon with which to attack both supply and demand.

The Massachusetts Program for the Control of Venereal Diseases was outlined more than two years ago when Dr. Allan J. McLaughlin was Commissioner of Health. The agitation started at that time and given a fresh impulse by the activities of the War Department last year, culminated in the passage, December, 1917, of the new regulations that went into effect February 1st. The appropriation of \$30,000, made by the Legislature in May for this purpose, was augmented to the extent of \$36,000 by the passage

of the Chamberlain-Kahn Bill in July. This still further linked up the state work with the War Department alike through its Army Section on Combating Venereal Disease, the Commission on Training Camp Activities and the United States Public Health Service, which organized a special venereal disease section in August.

We might summarize the aim of the State Program thus simply:

1. *To find every case of venereal disease in the state.*
2. *To place it under the best possible treatment.*
3. *To keep it under treatment until cured, or at least rendered non-infectious.*
4. *To prevent further spread through educational and repressive measures.*

1. Our means for finding cases are:

- a. By reporting first by number, later by name if the patient slips from treatment.
- b. By learning from each patient the source of infection.
- c. By correspondence stimulated by carefully placed publicity.

2. To place the case under the best possible treatment:

The state is subsidizing 16 clinics, located according to population, through the state, and is furnishing free arsphenamine to these clinics, to institutions, and to private physicians for cases of syphilis in an infectious stage.

3. To provide for continuation of treatment:

Each of the state-approved clinics will have a follow-up system which aims to ensure continuation under treatment of all patients coming to the clinic until free from danger to the community, also to discover whenever possible the source of contagion. This person to be looked up with due appreciation of the confidential nature of the case.

4. As preventive measures:

- a. Education, such as our young men have been receiving in the army, and wholesome recreation for young people.
- b. Repressive measures applied to the business of prostitution, drug-store prescribing and to quack treatment.

Another important element in the prevention of syphilis and gonorrhœa is thoroughness of work by the average physician, painstaking diagnosis and thorough treatment, careful reporting of cases and attention to the continuation under treatment, holding a high standard for the discharge of cases as non-infectious. All these measures are in the hands of the general practitioner as well as of the hospitals and clinics.

The world war is over and victory was on our side because

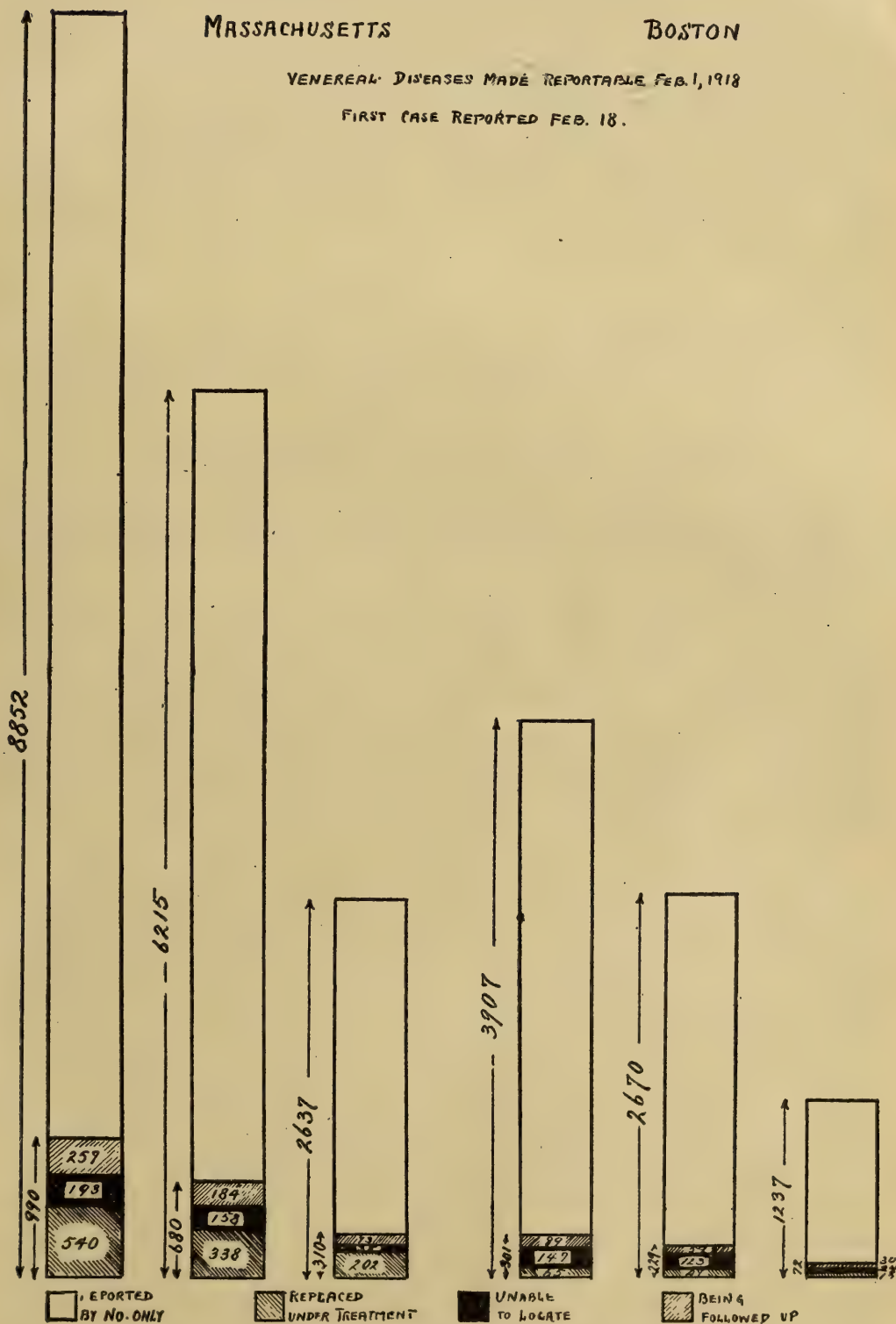
VENEREAL DISEASE REPORTS TO NOV. 1, 1918

MASSACHUSETTS

BOSTON

VENEREAL DISEASES MADE REPORTABLE FEB. 1, 1918

FIRST CASE REPORTED FEB. 18.



we were on the right side. This still greater war is but just begun, and again the United States is on the right side, but in this war we are the first in the field. All eyes are looking to the United States to plan this campaign. Let us keep to the high standard set by the United States Government for its men in service. Government methods have reduced a community venereal rate varying from 200 to 500 per thousand to a minimum of 16.03, — a record shown by the November 1st report on the Expeditionary Forces "over there." When community methods can show a better record than that, then and then only may we say that we have outgrown the army method.

OPTIMISM VERSUS PESSIMISM IN PRESENT-DAY HOMŒOPATHY

BENJAMIN C. WOODBURY, M.D., Honolulu, Hawaii

A suggestion in the editorial pages of the September number of the GAZETTE has prompted the writer to make a few comments upon the above title.

It is not very many years since the term "therapeutic nihilism" was current in medical literature, and even today we find occasional mention of it. Yet for long it dominated the mind and soul of so-called scientific medicine. In the maddening dilemma following the *ex cathedra* statements of the leading medical authorities relative to this great bugaboo, there followed various attempts to bolster up the waning interest in internal medication, but with only partial success.

Meantime there has developed a corresponding tendency in the ranks of homœopathists, till at the present time it may truly be said that there exists a well defined *pessimism* among the majority of so-called homœopathic practitioners regarding the curative properties of the very remedies upon which, in the palmy days of his medical tutelage, the student of a few years since was wont to place his confidence in time of stress. Where has vanished the old-time *optimism* of our fathers; where is that hopeful faith with which every good homœopathic practitioner entered the bedroom of the sick? Surely, the much-vaunted methods of scientific medicine have done little to increase that faith: nay, the present era in medical practice has given way to fear instead of faith, till we have become almost hopelessly inoculated with the cankerous decay of pessimism. This philosophy, we might almost say, is more grave and less hopeful in outlook than that of therapeutic nihilism of which we have just spoken; for the nihilist, like the agnostic, knows and admits his shortcomings; the pessimist,

on the other hand, undervalues even the evidences of facts and therapeutic verities. What can we do to mitigate such an apparently hopeless situation?

The present world-crisis has done much to bring to public notice the status of homœopathy as a distinctive school of medicine; yet homœopathy has thus far received no official sanction as a method of therapeutics. It is true that the homœopathic profession has been officially recognized as an organized branch of general medicine, and thus appealed to; and loyal indeed has been that response.

The supreme sacrifice of the homœopathist has been the full devotion with which he has laid upon the altar of democracy the possession of his therapeutic liberty. Enough cannot be said in favor of those loyal and fearless sons of Hahnemann, who have thus generously given their all, even to life itself, ungrudgingly and without a qualm. There are no "schools" in the United States Army. This has repeatedly been emphasized; and when our homœopathic brethren have been granted commissions, they have been given them as physicians, not as homœopathic physicians. This is as it should be, truly. Nor can the generosity of these men be underrated or their service overlooked. It may be that thus and only thus can the salutary method of similars be given a new birth of freedom.

What can we do to arouse a new interest in homœopathic institutions; how best can the students in our own therapeutic training camps be given an adequate conception of the method of choosing medicines according to the law of similars? It may to some seem an impossibility. But is it insurmountable? We believe not. Eventually, in our opinion, the best method of teaching homœopathy will be found to be post-graduate instruction.

The majority of our older institutions have already incorporated adequate training in physiologic materia medica and therapeutics. This may in the end make for better and more efficient graduate students, but the homœopathic method can best be taught to graduate physicians who have knowledge and experience with both methods of practice. A body of instructors, thoroughly imbued with the spirit of homœopathic institutes and practice in post-graduate institutions or in post-graduate departments in our recognized colleges, could present homœopathy to the best possible advantage. It would, in fact, be an approach to the older preceptor system, which has undoubtedly never been surpassed for clear-cut and practical value to the prospective student of medicine. In fact, it has been said that the Harvard Medical School was in a large measure the result of a protest against the maintenance of undergraduate instruction from preceptor to student, so successful and lucrative had this system become under the old order. Hence

originated likewise the long-standing prestige of medical instruction minus the honorarium, which the new order of paid instructors and professorships will undoubtedly in time supersede.

There is certainly no better way to learn homœopathy than to follow in the footsteps of a master of the art. It has been the writer's rare privilege to know a select few of such men, and it is to the inspiration of their example that he must confess allegiance, and profess his increasing devotion to the innate supremacy of true homœopathy over the many therapeutic by-paths of the present era in therapeutics.

The true follower of Hahnemann sits at the feet of his master, and the prescience that was his, glimpsed yet afar off, and the spirit of the method become to him an almost living presence.

During the writer's brief sojourn in Hawaii, it has been his privilege to follow in the practice of Dr. George J. Augur, a master homœopath, and his conviction of the wonderful therapeutic value of true homœopathy has not only been re-affirmed but strengthened.

Let me present the following cases, which well exemplify the principles above enunciated:

Case I. Carolyn, aet. 9 years, was brought to the writer in December of 1916, suffering from a simple but troublesome complaint, namely, ringworm of the scalp. There were other vestiges of the eruption which had in part been suppressed by the application of iodine, upon the face, especially over the cheeks, around the chin, and across the bridge of the nose, but the most pronounced manifestation was upon the hairy scalp, where there were several areas of varying sizes, denuded of hair, and there was a good deal of dandruff, with itching and scaliness. Sepia was given in two potencies, as follows: Dec. 20, Sepia 1m; Jan. 6th, Sac. lac.; Jan. 24th, Sepia 1m; Feb. 10, Sac. lac.; March 10, Sepia 50m; with complete relief of the condition; the ringworm disappeared, and the scalp was restored to its former healthy and normal condition.

Case II. Miss M. L. consulted the writer on March 12, 1917, suffering from herpes zoster involving the left intercostal region. She had been suffering from pain, itching, and the usual symptoms of this disorder for nearly a week, without promise of relief. She was given, upon indications, Rhus tox. 1m, a dose dry on the tongue, and Sac. lac. powders. Four days later she was much relieved. One more powder of Rhus tox. was given, and she has since remained well.

It may be well to remember that Jahr recommends chiefly Rhus and Graphites, in this disorder, in the Pocket Repertory, and in his *Forty Years' Practice* he strongly advises the use of Arsenicum when the symptoms correspond. With these three remedies in proper dosage, the majority of cases of this painful disorder will be easily managed.

Case III. Miss R., aet. about 60 years, a very strict vegetarian, became ill in March, 1917, with inability to digest food, eructations after eating, constipation, and a train of symptoms attributable to profound auto-intoxication. Finally, after a few weeks, this condition culminated in an acute gastric attack, with fever, vomiting, burning pains in the stomach, acrid vomitus, pyrosis, and extreme tenderness over the epigastrium, with soreness of the throat on swallowing and upon eructation. Several remedies suggested themselves but were given without relief. Arsenicum 30th. was then given and entirely removed the fever,

vomiting, pain and pyrosis, and after consenting to take, for a time at least, a moderate amount of animal food (which was insisted upon by a consultant), this patient made sufficient progress to leave for San Francisco within three weeks. No definite diagnosis was reached in this case, but the clinical evidences pointed strongly to gastric ulcer.

Case IV. Mrs. J. M. W., aet. 80 years, developed acute lobar pneumonia in the upper portion of the right lung. There had been a pneumonia many years before and attacks of bronchitis about every year or every second year during a long period, but the patient had no marked emphysema or other distressing conditions prior to this attack, aside from a pronounced debility due in part to her advanced years. Aconite was given in the early stages, but the fever did not diminish. Two days later it became very evident that there was probable involvement of the lung. At this time the patient presented an increasing area of consolidation in the affected portion; cough, with scanty, slightly blood-streaked sputum; rattling in chest, but almost no ability to expectorate; fever 102.8; pulse 110, slightly intermittent; moderate cyanosis of palms; restlessness and anguish. In consultation with Dr. Augur, antimonium tartaricum was decided upon, and it was given in the 200th. potency, in water, one teaspoonful once in two hours. Aside from a single dose of phosphorus at one time when there was great oppression and pain in the chest, this remedy carried the patient through to recovery. It was suspended when there was any marked improvement, and resumed upon aggravation of the symptoms, and during the crisis, which occurred upon the fifth day.

The subsequent history of the case is that the patient got well enough to drive out daily, until one day, after a longer turn than usual, she developed an acute cystitis, which had been an old enemy at times in the past, and for which local applications had been used. The remedy which gave decided relief and carried her to recovery in about three weeks time was cantharis 30th. For a subsequent bronchial cough and a severe backache she was given kali carb. 200th., with complete relief. Since then there has been no other medicine. One interesting feature of the pneumonia involvement was that, after the beginning, when there were a few rust-colored sputa, there was absolutely no expectoration and but the slightest suggestion of a cough. The patient is well at the present time, and says she has not felt as well for more than a year.

Case V. Mrs. W. O. S., aet. 62. At the age of 25 years she suffered from an attack of phlegmasia alba dolens, after the birth of her third child. Since taking an overdose of quinin five years ago she has flowed periodically, a bright red flow worse from motion or exertion; this may or may not be associated with attacks of acute bronchitis, to which she has been subject once or twice a year for some time. It may be well to state that the patient experienced the change of life without any troublesome or alarming symptoms, and has during the present difficulty been carefully examined by several surgeons, but there has never been any evidence of malignancy. During an attack in May, 1917, associated with an acute bronchial invasion, patient had much flow, which was very much aggravated from motion, with soreness of chest and abdomen on coughing, and there was suffocative breathing on lying down or from exertion. She was given bryonia in the 30th., 200th. and 1m potencies, in sequence, since which time, now a year and a half, there has been no bronchial attack, and the metrorrhagia has not returned. For a few remaining symptoms, chief among which was smarting on urinating and involuntary urination upon slight cough, or when sneezing, she was given causticum; and there have been some other remedies for intercurrent conditions, but the bronchitis and the flowing have not since returned. While bryonia seemed to be the direct similimum in this case, it is also one of the remedies having an antidotal relationship to the ill effects of quinin.

TWO CASES OF ADENITIS

Case VI. A baby, aet. 17 months, developed an acute inflammatory gland in the post-cervical region, and when first seen, October, 1918, belladonna relieved the fever somewhat, also an associated dry heat of the skin, with restlessness and a peculiar twitching of the muscles and convulsive motion of the spine on lying down, and when first falling asleep. The gland continued to increase in

size, however, and the temperature kept high — 102–103 — until, on Nov. 6, mercury biniodid in the third decimal potency was given, which was followed by relief of the fever, and slight relief of the tenderness, but there was difficulty in breathing on lying down, with coarse bronchial sounds, especially when lying on the left side, with difficult expiration. He was altogether the type described in the pathogenesis of bromine: fair skin, light hair, blue eyes, and there was the associated scrofulous, hard swelling of the gland. He was accordingly given four powders of bromium Cm on Nov. 12, and three days later was, as his grandmother stated it, astonishingly better. There was complete relief of the breathing, and the gland had decreased fully one half in size. On Nov. 20, he received four more powders of the same remedy, and on Dec. 5, as there was a slight enlargement of the neck still remaining, the remedy was again repeated. There is every evidence at the present date that he will entirely recover. He was examined by Dr. W. G. Rogers, with reference to the condition of the nose, throat and aural cavities, with the report that it was a cervical involvement secondary to tonsillary infection. During the course of treatment, however, the condition of the tonsils has markedly improved.

The most interesting feature of this case was, as his grandmother put it, that prior to his illness the baby had had a strong craving for salt and disliked sugar, and now the reverse is the case: he craves sweets, with complete aversion to salt. In fact, said she, "His whole nature seems changed."

Case VII. Mrs. W. had suffered for some months from indigestion of a peculiar kind which she described as the sense of a load at the pit of the stomach and which was temporarily relieved after eating, but aggravated when the stomach became empty. After being given several remedies in vain for this condition, she was finally relieved for a short time by Natrum carb. 50m potency. (It may be well to remark parenthetically that the patient had been a sufferer for the greater part of her life from chronic headaches, manifesting a somewhat similar modality — namely, that she was always hungry during the headache and would feel like getting up at night and eating before the pain came on or during the attacks. She was given Psorinum 50m nearly a year ago and has had no headaches since.)

On November 1, after riding in the wind, she developed fever, stiffness and soreness of the glands of the anterior lower cervical region, and an exacerbation of the stomach disturbance, with inability to digest even the simplest food. There was foul breath, coated tongue, great sensitiveness of the throat on swallowing or upon eructation, and complete inertia of the bowels, which had to be relieved by oil enemata. The temperature was generally normal in the morning, occasionally sub-normal or a little above. But at night it ranged from 102.4, or 102.6 to as high as 103.8; and the pulse rate was 90 to 105. Upon examination, a few isolated rales were found beneath the scapula on the right side of the chest; there was no evidence of coryza, but a persistent hacking cough, without expectation.

After giving various remedies, chief of which was aconite, which would temporarily relieve the restlessness, she was given mercury biniodid, especially indicated by the glands being worse on the left side; by great sensitiveness to pressure; by night aggravation of all symptoms; by moist, large and flabby tongue, showing imprints of teeth. The pains in the neck were intense, with shooting into the ears, and especially extending to the inferior maxilla. There seemed to be general exacerbation on alternate days. The remedy was given in the third decimal trituration in water, once in two hours, with the result that the fever was very soon relieved, the sensitiveness of the glands diminished, and the temperature gradually became normal.

There was, however, with the cessation of the fever, a return of all the old stomach symptoms in renewed force, so that all food caused distress, and the patient was greatly reduced in weight and strength. Owing to the extreme emaciation, slight hacking cough which had persisted throughout the glandular involvement, with the persistence of the rales above mentioned, the chest was again carefully examined in consultation with Dr. Q. A. DeTuncq, and it was decided to have some tests made for a possible tubercular focus. Accordingly, radiographs of the chest were made by Dr. A. N. Sinclair of Honolulu, with negative results.

Nux vomica was being given at this time, as it had several times suggested itself in this case, but without the slightest benefit. It finally occurred to the writer to return to the last remedy that had benefited. She was given Natrum carb., this time in the sixth trituration in water, which gave almost immediate relief of the stomach symptoms. There was return of strength, appetite, and up to the present writing the patient has gained eight or ten pounds in weight, and looks better in every way. After giving the remedy for about ten days, as conditions warranted, a peculiar restlessness and uneasiness of the feet and legs developed (an old symptom), which occurred particularly at night, and was generally relieved by massage. This symptom is, of course, a so-called "keynote" of Zincum, but Kent also gives, under "Restlessness of feet at night: *Cham.*, *Nat-c.*, *Puls.*, *Thuj.*, *Zinc.*" Accordingly, the remedy was continued, but the potency was changed to the 50m, the first that had given relief, and she has continued to improve, and is now making an excellent recovery. Her bowels are now moving normally, and she is digesting her food without discomfort. It is interesting to note that Clarke, in his Dictionary of Materia Medica, gives under this remedy: "Swelling and induration of glands." It also has a peculiar constriction of the stomach, almost akin to that presented in the well-known condition of Plumbum, that of a sensation as though the abdomen were drawn inward to the spine. A symptom approaching this in similarity was also present in this case.

Case VIII. Mrs. J. S., aet. 57 years, had been a sufferer from epilepsy for many years until the climacteric was passed. This trouble dated from a fall received at the age of 15 years. During all this time she had suffered periodically from a peculiar melancholia, has at times found it almost impossible to contain herself, and has several times nearly lost her reason. She has had various remedies from different physicians, and about a year and a half ago, in California, a lumbar puncture was made, with temporary relief of the pressure symptoms. Her old conditions, however, soon returned, until upon her return to Honolulu, Dr. George J. Augur gave her Aurum met. in potency, which has been the one remedy that has always given relief. There has been in her case at times an almost uncontrollable desire to commit suicide, and when the condition is upon her, nothing looks right to her, even her own family cannot be tolerated by her. She has received in the past two months, in the absence of Dr. Augur, two prescriptions of this remedy in the 40m, with complete relief of her mental condition, at least temporarily.

The writer is not concerned in this paper with the explanation of the action of these subtle and invisible forces that are liberated or generated in comparatively inert substances, through the Hahnemannian process of trituration and dilution. That such potency is latent within these so-called simple homœopathic remedies, only he can know who is sufficiently unprejudiced to investigate, and sufficiently enlightened to utilize.

Surely, where one is willing to use remedies from the low potencies to the so-called high, as herein administered, he cannot be accused of prejudice, nor can he be criticised for failure to get reasonably satisfactory results from those potencies administered. What we most need in homœopathy today is a renewed faith in the efficacy of these dynamic agencies to heal the sick, administered upon the indications given us by the earlier followers of Hahnemann, reinforced wherever possible by the more scientific verifications of the present day. Our apparent therapeutic nihilism will then be dispelled for the clearer insight and fuller vision of the really direct and accurate healing power of drugs.

THE PATHOGENESIS OF IODIN IN ITS RELATION TO PNEUMONIA *

GEORGE F. WORCESTER, M.D., Merrimac, Mass.

In order that a drug be either beneficial or curative in a disease, one of three characteristics is primarily essential.

1. Its sphere of action must of necessity include those tissues involved by the disease, or,

2. Its *modus operandi* must be such as to exert a reaction against the disease *in situ* or call upon the metabolic processes of the host and so raise the resistance of the host that the disease process will be overcome, or,

3. It must exert some specific action against an invading organism.

Absorption of Iodin.

It enters the blood as iodid or in combination with protein, since it readily enters into chemical union of various sorts and cannot long exist free in contact with the tissues. Thus it will be seen that no matter what form of iodine may be ingested its ultimate end product for absorption is the same. Once absorbed, iodine or its compounds is taken up by the body cells, the amount present depending upon the relative affinity of the latter for it. The spleen and lymph glands attract it first, then the liver, also the thyroid, and then it is slowly released from these organs.

Sphere of Action.

In a series of acute poisonings all of the victims ingested varying amounts of the tincture, and the following symptoms were noted:

Appetite increased; secretions such as saliva, urine, stools, and nasal mucus increased; abdominal cramps; red papular rash; constriction of chest with short, dry cough and irritation of the bronchial tubes; cardiac and respiratory action increased.

Chronic poisonings showed emaciation, weakness, palpitation, tremor, priapism, insomnia, increased pulse, increased appetite, dry cough, and hard, firm thyroid (stored iodine). In females there were also atrophy of the breasts and profuse menses.

In this same series of poisonings there occurred the following chest symptoms: Hoarseness and aphonia, pain on deep inspiration, constriction of the chest, short, dry cough, dyspnoea, and inflamed throat.

Necropsy on these cases showed the following chest pathology: Inflammation of the bronchial tubes down to the finest branches, covered with mucus and oedematous; numerous small pin-point

* Read as part of a symposium on "Drugs in Pneumonia" before the Alethean Club, February, 1918.

abscesses in the lungs; emphysema between all lobules and lobes; the parenchyma was bloodless.

Among the healthy individuals who have proved the drug upon themselves the following chest symptoms have occurred: Hoarseness, aphonia, croupy cough, pains in larynx with desire to cough, painful pressure with stitches in larynx, effort to expand chest produced cough but no pain, respiration and especially inspiration difficult, and tightness of chest.

Animal experimentation shows the following: 2 drops of the tincture of iodine were given twice a day for 22 days; the animal was then killed with chloroform. Microscopic examination reveals the lung in a state of complete consolidation. Blood-vessels, alveoli, and bronchi are packed full of exudate. Here and there are seen lobules which are beginning to break down into abscesses. To the unaided eye the changes which the drug has produced are quite apparent. The pneumonic process induced by the drug made its appearance very soon after its administration, which is confirmation of one of the indications calling for iodine in pneumonia, namely, "a rapid extension of the consolidated area."

Modus operandi of iodine

Results obtained with iodids are variously ascribed to

1. Influence on general metabolism of the body.
2. A resulting fall in blood pressure.
3. A change in the viscosity of the blood.
4. A lymphocytosis.
5. An increased action of the lymphatics.
6. The oxidizing properties of nascent iodine.

The *modus operandi* of iodine is not definitely understood. The proteolytic theory is given most credence and is supported by the febrile manifestations sometimes observed after giving iodids. According to this theory, the union of iodine with antibodies already in the infected individual gives rise to a ferment which has the power of digesting certain proteins; in this process, toxic substances are formed which create local inflammation in the lesions and at times a general febrile reaction.

Its effect on general metabolism is shown by the fact that the total urinary nitrogen, phosphates, and especially chlorids, are increased. Proteins and fats, with which iodine combines, are rendered more susceptible to decomposition—hence, loss of weight.

The respiratory quotient, *i. e.*, the ratio of oxygen taken in to carbon dioxide eliminated, is increased; thus showing that compounds rich in oxygen are reduced to form compounds poor in oxygen and extra carbon dioxide.

Apparently the influence of iodine in causing tissue destruction is exerted especially on the more simple or recently acquired form of cells such as fibrous tissue.

Iodine is a lymphagogue in that it increases the transudation of fluid from blood vessels into the tissues. The lymph, becoming richer in salts than normally, owing to the addition of those of the blood, extracts water from the surrounding tissues or pathological exudates. This then enters the blood stream, carrying with it the waste material from the tissues, which material is eliminated through the excretories. It also stimulates lymphoid tissue in general, resulting in lymphocytosis, especially noticed when small doses are given for a short time.

Jobling and Petersen have recently done some work concerning the therapeutic action of iodine in tuberculosis and syphilitic gummas. As to tuberculosis, they state that the iodine combines with the unsaturated carbon atoms of the fatty acids. When this occurs in necrotic tissue, and is sufficient to lower or remove antiferment action, autolysis ensues, and the inorganic iodides diffuse in the caseous matter and furnish iodine.

In syphilis, the unsaturated fatty acid radicals which inhibit autolysis are saturated with iodine; then the ferments present or which are brought in, become active, autolysis takes place and necrotic tissue is absorbed. In short, iodine neutralizes the action of agents that prevent the solution and absorption of necrotic tissue and at the same time lays bare to the action of the real germicidal agent the infecting organism which previously had been protected by necrotic tissue.

On the other hand, Sollman says that free iodine cannot be liberated in the body since all the conceivable reactions for the liberation of iodine from its compounds require much higher hydrogen ion concentration than exist anywhere in the body.

It is also stated that iodides bring about marked hyperæmia in the vicinity of tuberculous lesions, and this is likened to Bier's hyperæmia acting locally in pathologic foci, the result being an afflux of blood, increased exudation, diapedesis, and more active phagocytosis.

As to the specificity of iodine towards the pneumococcus, search of the literature brings nothing to light in this regard.

Conclusions:

1. The sphere of action of iodine is manifested almost wholly on the larynx, trachea, and upper bronchial passages in so far as respiratory organs are concerned.

2. Its *modus operandi* is such that in a pneumonic process, in order for it to exert any beneficial action, it would be most suited

to a late, unresolved, walled-off process and not during the acute febrile stages of congestion or hepatization.

3. In the light of our present knowledge, iodine seems to exert no specific action upon the pneumococcus.

HISTORY OF TUBERCULOSIS

H. F. GAMMONS, M.D., Carlsbad, Texas

In order that we may understand the origin of many erroneous ideas about tuberculosis, which erroneous ideas unfortunately many physicians are still harboring, a brief consideration of the history of tuberculosis is most desirable.

For purposes of description the history of tuberculosis has been divided into four periods which are not in some instances very definitely separated. These periods are

First. The Period of Symptoms.

Second. The Period of Anatomy.

Third. The Period of Cause.

Fourth. The Period of Prevention.

In the first period all phases of the disease were based on symptoms, nothing being known of the cause. Authors writing five and six centuries B. C. gave the symptoms of tuberculosis as follows: Extreme wasting of the body, severe cough, profuse expectoration, high fever and drenching night sweats. They taught that people with these symptoms, which were those of the disease known as consumption, died. It may be pointed out that today when patients have these symptoms they likewise die. Some of these early writers recommended milk diet and dry climate, others recommended sea voyages, and still others horseback riding, but none of them recommended rest; as all physicians do now who want to cure their patients. The contagious nature of the disease was recognized at this time, and prolonged residence with a consumptive was considered a frequent cause of tuberculosis.

In the second period, the first accurate description of the disease process in the lungs was given, and the small areas were called tubercles.

In the third period, or the period of cause, Villemin, Conheim, and Koch experimented with animals, injecting the tubercles into them. Villemin demonstrated that tuberculosis was infectious. Robert Koch in 1882 discovered and isolated the tubercle bacillus.

In the fourth period, or period of prevention, representatives in all countries gradually took steps to check and prevent tuberculosis.

The French were the first to institute preventive measures. In the United States, Dr. Edward Trudeau was one of the first to institute the fresh-air treatment, and the work that he started is still continued at Saranac Lake by equally zealous men.

The National Tuberculosis Association through its most able leaders has done wonderful work along lines of treating and preventing tuberculosis, and every physician owes it to himself to become a member of this philanthropic association.

Massachusetts has the honor of being the state to establish the first state tuberculosis sanatorium in this country, which was built at Rutland in 1898, and through the efforts of the visiting physicians, Drs. Clapp and Bowditch, coupled with those of the resident physicians and the trustees, the institution was kept on a high plane of efficiency.

The State of Texas, through the activities and interests of the Board of Directors and Superintendent of its State Sanatorium, have decided to instruct and educate the people of that state in things tuberculous. Many other states are doing work somewhat similar, and when one realizes the ubiquitousness of tuberculosis one becomes convinced that a partial solution of the tuberculosis problem is universal education not only regarding the disease tuberculosis but also regarding how to live as nature meant human beings to live.

EDITORIAL

Books for review, exchanges and contributions — the latter to be contributed to the *GAZETTE* only and preferably to be typewritten — subscriptions and all communications relating to advertising and other business should be sent to THE NEW ENGLAND MEDICAL GAZETTE, 80 East Concord Street, Boston. Make checks payable to THE NEW ENGLAND MEDICAL GAZETTE.

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THE BLUE SLIP

To save postage, paper, labor and time we enclose in this issue, in lieu of a bill, a blue subscription payment slip which, we trust, all of our subscribers will fill out immediately and return with their remittance. No receipts will be sent unless specially requested. Please use this slip and thus relieve us of the expense of sending bills.

AN APPEAL

Early last year military enlistments reduced our editorial staff from seven to two members, and one of the remaining ones, because of his residence several hundred miles away from the office of publication, could of necessity do but little active work. Almost the entire editorial and managerial burden, therefore, was carried by a single individual, and this fact must be our apology for the tardy appearance of recent numbers. The prospective early return of our full staff will insure a speedy reversion to ante-bellum conditions and will enable us to carry out plans that, we hope, will place this journal in the front rank of medical periodicals. We wish here to thank all of our subscribers who because of their forbearance and good-will have made it possible for us to pass safely through a period of extreme stress which at times threatened the very life of this publication.

Another danger, however, and a far graver one than the depressing influence that a world war exerts upon most peace-time endeavors, threatens not only this journal but all homœopathic institutions and, indeed, the entire homœopathic profession. This

danger is twofold and lies, first, in the lack of cohesive effort among our members and, second, in the indifference toward scientific progress displayed by most of them. These are the reasons for the dwindling numbers of our colleges and students, for the slim attendance at our society meetings, for the disdainful attitude of our holier-than-thou brethren, and for the inferior quality of our journals.

It has been said about some of the last that they are not worth the paper used for printing them. We make no attempt to deny it; but it is true chiefly because there is a dearth of publishable manuscript from the pens of homœopathic writers.

Why should constant urging and prodding and nagging of prospective authors be necessary to produce an occasional original article or a few sporadic case reports? Do not plead lack of time or of interesting material as an excuse. The busiest men are usually the most prolific writers, and it has been our personal experience that even in general practice one constantly meets instructive and interesting problems and that even a twelve-thousand-dollar practice leaves sufficient leisure for an occasional literary effort.

Those doing special work are still more fortunately placed. They have usually more time at their disposal; they see cases of any one condition in sufficiently large numbers to permit of valuable research; and by virtue of their special training their writings upon subjects within their special province carry the weight of authority.

The motive for writing for publication may be purely altruistic; that is, it may be a desire to share knowledge and experience gained by special study or through circumstances with others, thus enabling them to meet and solve similar problems more easily. But this need not be the only motive; indeed, it seems to us that ordinarily it should not be the motive at all; rather would we urge that prospective authors look upon a published article as a legitimate and highly effective means of advertising. Crassly materialistic, you say? True, but medicine is a business, medical journalism is a business, and no business thrives on charity or altruism. The millennium is not yet here, and pending its dawn the dollars and cents side of a business transaction remains paramount.

The New England Medical Gazette has completed its fifty-third year. Ownership, editorial supervision, and managerial conduct have changed frequently during its long life. Up to the time of the present régime it yielded at least a moderate financial surplus. During the past year, however, increased cost of materials and labor have made the yearly cost of production practically equal to the annual revenue from subscriptions and advertisements. There is at present, therefore, no salaried position of any kind connected with this periodical. Nevertheless, the editorial staff

give freely and eagerly of their time and shall continue to strive for the emancipation of the *Gazette* from the murk of mediocrity.

But we must have your encouragement, we must have tangible support; and this support and encouragement should take the form of an influx of suitable original manuscript for publication. Without such support the *Gazette* cannot live. But we are not yet ready to see it die, because we feel that it fills a niche in medical journalism and among homœopathic institutions that ought not to be vacant.

Make this journal — your journal — a clearing-house of medical thought and medical information. Its pages are open to you. Use them! During the current year we want at least one contribution from every one of our subscribers, be it a short letter for our correspondence department, a case history, or a pretentious report of original research.

Don't forget that your support, your active, direct, tangible, personal support, will not only benefit this publication but through it the entire homœopathic profession, particularly yourself, and those medical institutions and organizations with which you are identified.

H. U.

REVIEWS

HOMŒOPATHIC PERIODIC LITERATURE

**The Journal of the Southern Homœopathic Medical Association,
October, 1918**

1. *What about homœopathy in the years to come?* 69. Garrison, J. B.

"If homœopathy is to be saved as a school of medicine, with colleges, hospitals, with national, state and county societies, it must be done by ourselves. We must support our medical colleges. We must give homœopathic treatment to the patients who enter our hospitals. *We must read homœopathic papers at our society meetings* [AMEN]. We must preach homœopathy and practice what we preach."

2. *Remarks on oral infection.* 74. Rumsey, C. L.

3. *Autotherapy in chronic disease.* 78. Duncan, C. H.

4. *Children and war: The problem in nutrition.* 85. Hobson, S. M.

5. *Strangulation of the umbilical cord.* 90. Shamer, M. E.

6. *The employment of corpus luteum therapeutically.* 91. Stevenson, H. M.

Corpus luteum is helpful in amenorrhœa due to ovarian insufficiency. It relieves the vague nervous symptoms of the cli-

macteric and the flushes and other circulatory disturbances, and the physical weakness, headache and insomnia. It is probably most efficient when given intramuscularly. The dose is 2 or 3 cc. given at intervals of 5 or 6 days. Rising blood pressure should be guarded against.

7. *Hæmoglobinuria*. 93. Kingsman, R.

8. *The Dowling tampon in post-grippe sinusitis*. 95. Koons, H. E.

9. *Medical inspection in the schools*. 97. Monroe, L.

Iowa Homœopathic Journal, October, 1918

10. *Some true anæmias with hints as to ætiology*. 145. Leonard, W. E.

11. *Differential diagnosis*. 153. Alien, F.

12. *Electricity in diseases of the eye*. 158. Boynton, W. E.

December, 1918

13. *Homœopathic remedies in pelvic diseases*. 217. Royal, G.

14. *Auto-hæmic therapy*. 226. Staads, S.

15. *Acute muco-purulent conjunctivitis*. 235. Homan, R. W.

Pacific Coast Journal of Homœopathy, September, 1918

16. *Gall-bladder infections*. 429. Wallace, E. P.

17. *Therapeutics of vibrations*. 444. Kapp, M. W.

18. *Some extracts from the college problem again*. 449. Close, S.

19. *Homœopathy "over the top."* 465. Hill, S. A.

October, 1918

20. *The knee — its internal derangements*. 483. Ward, J. W.
A long list of remedies, and their indications, useful in affections of the knee, is given.

21. *Preliminary notes on the treatment of chronic nervous disorders by intraspinal injection of medicine selected homœopathically*. 493. Goldsbrough, G. F.

22. *"Spanish flu."* 505. Hill, S. H.

November, 1918

23. *Report of treatment of acute poliomyelitis anterior at Flower Hospital, New York City, 1916*. 543. Hill, S. A.

Remedies were given intraspinally for their homœopathic effect. Those most frequently indicated were gelsemium, bryonia, conium, curare, cicuta and hydrocyanic acid. Dilutions of the remedies were made in distilled water, carried to the 6x potency, and sterilized at a temperature of 56 degrees for one hour.

24. *Radium in fibroid tumors.* 551. Cowperthwaite, A. C.
 25. *The action of solutions of high attenuation on living organisms.* 554. Schneider, A.
 26. *Report of a case of hernia.* 557. Barnard, F. S.
 27. *Hydrotherapy in pneumonia.* 559. Van Allen, L. K.
 28. *The retroverted uterus.* 562. McAulay, M.
 29. *Iridotaxis — with report of two cases.* 574. Kellogg, F. B.
 30. *Cystocele — cause and cure.* 580. Barnard, F. S.
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GENERAL MEDICINE

The diagnosis of mitral regurgitation (valvulitis). Rothschild, M. *Jour. Am. Med. Asso.*, 1919, lxxii, 327.

Mitral regurgitation has been erroneously considered to be the valvular disease most easily recognized. The presence of systolic murmur at the apex has generally been regarded as evidence of mitral valve disease, but too much emphasis has been placed on the existence of such a murmur. The examination of large numbers of recruits leads R. to believe that deviations of the cardiac mechanism from the presumed normal are almost the rule. Systolic murmurs are heard in at least 50 per cent. of all men examined.

R. suggests the following criteria for diagnosis of true valvular disease rather than mere functional murmur:

- (1) Cardiac hypertrophy;
- (2) A systolic apical murmur;
- (3) A definite history of one or more attacks of acute articular rheumatism (not growing pains or tonsillitis).

In order to make a diagnosis of mitral regurgitation it is necessary to have the first and second or the third and second of these criteria.

Irritable bladder in women. Reed, C. A. L. *Jour. Am. Med. Asso.*, 1919, lxii, 332.

"Irritable bladder" manifests itself by the following symptoms: Frequent desire to urinate and slight or severe pain with or without straining when urinating.

The underlying condition is an abnormal sensibility of the vesical mucosa, caused by extrinsic or intrinsic conditions. Among the extrinsic causes are pregnancy, displacement of the uterus or intestines, tumors of the uterus or ovaries, infection of the Fallopian tubes with resulting pressure or adhesion formation, and adhesions between the bladder and intestines.

Among the conditions that arise within the bladder may be mentioned acute infections with gonorrhœa or other bacteria,

tuberculosis, tumors, vesical calculi, diverticula, ulceration, or retraction and narrowing of the bladder after acute cystitis.

R. calls special attention to what he calls punctate ulcer of the bladder as being in the majority of cases the cause of irritable bladder. He cites three case histories.

The diagnosis of punctate ulcers is based upon the previous history, the symptoms of persistent bladder irritability, the uranalysis findings and the cystoscopic appearance. Other possible causative conditions of irritable bladder should be excluded. The previous history is that of long duration, persistence in spite of treatment, and gradually increasing severity. The symptoms are frequent desire to urinate, painful urination, pain in the bladder with reflex pain in the rectum and perineum. The uranalysis findings are negative except for the presence of occult blood.

The treatment consists in excision of the ulcer-bearing area.

BOOK REVIEWS

Röntgen Diagnosis of Diseases of the Head. Dr. Arthur Schuller; Head of the Clinic for Nervous Diseases at the Franz-Josef Ambulatorium, Vienna. Authorized translation by Fred F. Stocking, M.D., M.R.C. With a foreword by Ernest Sachs, M.D., Associate Professor of Surgery in Washington University. Pp. 305. Price, \$4.00. C. V. Mosby Co., St. Louis, 1918.

This excellent book is one of special value to the Röntgenologist and those especially interested in medico-legal questions. One of the many excellent features of the book is the detailed description of the X-ray findings of the normal skull, and the importance of position in X-ray exposures.

Röntgenograms of a great variety of diseases and injuries are shown, and the conditions fully described. The author lays special stress upon correct technique, which naturally results in better interpretations. The whole work is extremely valuable and interesting.

A. G. H.

Abstracts of War Surgery. An abstract of the war literature of general surgery that has been published since the declaration of war in 1914. Prepared by the Division of Surgery, Surgeon-General's Office. Pp. 434. Price, \$4.00. C. V. Mosby Co., St. Louis, 1918.

The need for this book is at once apparent when one attempts to select from the mass of material, which has been contributed to various journals, definite and reliable information of particular topics. Here are grouped, in different sections, the following subjects:

Wound Infection and Treatment; Tetanus; Gas Gangrene; Abdomen; Chest; Cardio-Vascular Surgery; Joints; Fractures; Burns; Anæsthesia in Warfare; Trench-Foot; Foreign Bodies; Peripheral Nerve Injuries; Jaw and Face.

These abstracts are from contributions to the leading medical journals by eminent writers, and they represent a grouping of information which is highly valuable.

The inspiration for this work was a mimeograph edition of 100 copies which was distributed to various surgical instructors in the army surgical schools and to the surgical chiefs of war hospitals. The demand was so great that it was then put in this permanent book form.

C. C.

Mental Diseases. A Handbook Dealing with Diagnosis and Classification, by Walter Vose Gulick, M.D. Cloth. Pp. 142, with illustrations. St. Louis: C. V. Mosby Company, 1918.

Concise and well written, this book should make a strong appeal to all who wish to refresh the memory or begin the study of mental diseases. It gives briefly and clearly the essential features of the common psychoses together with the more recent nomenclature and classification as advocated by the American Medico-Psychological Association.

Photographs of cases and excerpts from case records enhance the value of the book. Functional neuroses are not given the space they deserve in view of their present frequency and importance.

N. H. G.

OBITUARY

Erastus E. Case

In the passing of Erastus E. Case of Hartford on October 27, 1918, homœopathy in Connecticut has sustained a severe loss. Dr. Case was born on May 28, 1847, in Canton Centre, Connecticut, and the activities of a long and busy life of seventy-one years were spent in his native state. His early education was received in the public schools of Canton Centre, and later he attended Williston Academy, Easthampton, Mass., graduating in the class of 1868. In 1872 he received his academic degree from Yale University, and two years later, in 1874, his medical degree from the New York Homœopathic Medical College and Flower Hospital. Beginning the practice of medicine in Hartford, he continued in active professional work until the time of his death, thus rounding out over forty-four years in his chosen vocation.

He was the honored president of The Connecticut Homœopathic Medical Society in 1888-1889, and of The International Hahnemannian Association in 1900-1901. Fraternally a Mason and Knight Templar, he was a member of Washington Commandary No. 1 of Hartford.

Dr. Case was intensely attached to his professional work, and throughout his long career in active practice has never wavered in his devotion to Homœopathy and in his untiring efforts for its advancement. Always steadfast in his views of the invincibility of the law *similia similibus curantur*, he devoted much time to the study of materia medica and made it his specialty in medicine. It was in this field that he gained eminence and distinction in the profession. His wonderful enthusiasm for the higher potencies and the marvellous results obtained from their use gained for him an international reputation. So urgent were the requests from the members of The International Hahnemannian Association for embodiment in book form of numerous papers and magazine articles contributed to medical literature, that he published his last book in 1916, bearing the title "Clinical Experiences." It was gratefully received in the United States and had an extended circulation in Europe.

Dr. Case was a man thoroughly loyal and true in all his friendships; his was not a nature that acquired friends rapidly or easily, but once that friendship was secured it was permanent and true to the utmost, not a single element of selfishness or disloyalty manifesting itself under the most adverse circumstances. He was one to whom you might turn in time of adversity or discouragement and be certain to receive not only sympathy but good and wholesome advice. His clear perceptions enabled him to grasp quickly any knotty questions and problems submitted to him for solution.

Reviewing the acquaintance of over a quarter of a century of professional and social life discloses always a friend, a gentleman, and a scholar. Temperamentally optimistic, the bright side was always uppermost. When he passed to the Beyond there was left a distinct vacancy in the world of medicine, a world which is greatly better for his having been a part of it. To his family — the widow, the sons and the daughters — we proffer our sympathy.

AUGUSTUS ANGELL.

RECENT DEATHS

William B. Van Lennep of Philadelphia, aged 65, a graduate of Hahnemann Medical College, Philadelphia, in 1880; professor of surgery there since 1884, and for several years dean of the faculty; chief surgeon of the Hahnemann Hospital and consulting surgeon to other hospitals in Philadelphia; died at his home, January 9, from heart disease.

Phillip S. Hall of Philadelphia, aged 52, a graduate of Hahnemann Medical College, Philadelphia, in 1891, and formerly professor of pathology in that institution, died January 16.

William P. C. Schunzel of Akiak, Alaska, aged 31, a graduate of Detroit Homœopathic College in 1908; owner of a private hospital in Akiak; a member of the commission of surgeons named by the territorial government of Alaska to combat influenza; for four years a member of the commission appointed by the board of education to aid in promoting health conditions among the children of Alaska; died at Old Hamilton, at the mouth of the Yukon River, December 23, from influenza.

Lieut. Jerome M. Leonard, M.C., U.S. Army, of Douglas, Arizona, aged 34, a graduate of Hahnemann Medical College, Chicago, in 1906, is reported to have been killed in action in France, November 8, 1918.

Benjamin F. Books of Altoona, Pa., aged 59, a graduate of Hahnemann Medical College, Philadelphia, in 1883, ex-president of the Pennsylvania Homœopathic Medical Society; died in Colorado Springs, December 22, from asthma.

Thomas M. Thayer of Herman, Minn., aged 42, a graduate of New York Homœopathic Medical College and Flower Hospital in 1900, died at his home, December 22, from pneumonia following influenza.

Antoinette K. Fellows of Chicago, aged 73, a graduate of Hering Medical College, Chicago, in 1896, died at her home, December 30.

Melville M. Moffitt of Washington, D. C., aged 61, a graduate of Homœopathic Hospital College, Cleveland, in 1882, died at his home, January 8, from uræmia.

THE IMPORTANCE OF MILK IN CHILDREN'S DIET

The need of public action to place clean milk within the reach of every family having little children is emphasized in the report of the New Orleans milk situation, just issued by the Children's Bureau, U. S. Department of Labor. This is the third study made under the Bureau's auspices of the use of milk in families where there are small children. The studies all indicate that children are not getting as much milk to drink as they need for healthful development; but in New Orleans, where the most recent study was made, children are found to be getting less milk to drink than the children of Baltimore, Maryland, and Washington, D. C., the other two cities studied. Seventy per cent. of the children under eight who were not breastfed were getting no fresh milk at all to drink. In Baltimore 66 per cent. and in Washington 45 per cent. of the children under eight and not breastfed were getting no milk to drink, although the Children's Bureau points out that a child under eight should drink at least three cups (a pint and a half) of milk a day.

In New Orleans only 20 of the 413 children from 2 to 7 years old included in the study were drinking as much as three cups of fresh milk a day.

While the New Orleans figures show that the children from 2 to 7 years old suffer most from lack of milk to drink, it is also to be noted that only 63 per cent. of the babies under two who are not nursed by their mothers are given milk to drink, leaving more than a third of these little children without fresh milk.

The situation, says the report, gives cause for grave concern because the children are not only being deprived of "the best and most nourishing food for normal development" but they are being given injurious substitutes in its stead.

Of 338 children 7 years old or younger who are not breastfed and are getting no fresh milk to drink, 245 are given tea or coffee in place of it. "Milk is not merely a pleasant drink," said a Children's Bureau expert recently, "it is a food, and really a solid food. Americans are a milk-fed race whose health will seriously deteriorate if the use of dairy products is given up."

The 211 families studied form only a small proportion of those in New Orleans having little children, but they are considered representative. Most of the parents were of native birth; in 17 families they were foreign born, and 5 were negro. Although definite figures regarding income were not secured, the families are of about the same economic status as those included in the recent Washington study, where more than three-fourths of the families were living on \$20 a week or less.

Reports issued by the Bureau of Labor Statistics show that the price of milk in the United States generally has increased 63 per cent. in the last 5 years. According to the Bureau of Markets of the Department of Agriculture, milk now retails for 16 cents in New Orleans. In several places, notably Shreveport, La., Nashville, Tenn., and Tampa, Fla., it is as high as 20 cents a quart. The point is made by the Children's Bureau that no matter what the price of milk it is still a cheap food, because it contains all the elements essential to growth.

Fifty-three per cent. of the total milk purchased in New Orleans is neither pasteurized nor inspected, and the report emphasizes the need of inspection for the whole supply.

THE VON PIRQUET SURVEY OF THE FRAMINGHAM DEMONSTRATION

The report on Tuberculosis Findings about to be issued as Monograph No. 5 at the Framingham Health Station contains an appendix devoted to a von Pirquet tuberculin survey. In view of the interest in this type of research work this article will be devoted exclusively to this survey.

During the months of June, July and August in 1917, an effort was made to carry out a relatively extensive series of von Pirquet tuberculin diagnostic skin tests upon a group of children between the ages of one and seven years. The work was carried out by one physician with previous experience in tuberculin studies, working under the direction of the Health Station Chief Medical Examiner.

Reasons for the Study

The reasons for making the study may be summarized as follows:

1. To determine at the beginning of the Demonstration the percentage of positive reactions in a definite age group, as an index of infection for comparison with possible subsequent findings.
2. To determine the comparative reaction percentages for different nationalities, neighborhoods, etc.
3. To indicate, if possible, certain sources of childhood infection, and certain factors which may be of importance in determining childhood resistance.
4. To select those children most needing care, for future special treatment in the schools, at the Health Camp, etc.
5. To indicate the reliability of the tuberculin test in the younger age groups as an index of genuine tuberculous diseases.

Procedure

The steps taken to accomplish the above results included a certain amount of intensive publicity, the preparation of a special record form and the securing of tuberculin (O. T.) from the Saranac Research Laboratories, etc. The children were selected by a house to house visit, and practically all of the testing and re-examinations took place in the homes. The technique of the test was carefully worked out and rigidly followed, all of the children having a thorough physical examination at the same time. Practical and investigative follow-up procedure included careful studies of related hygienic factors, the assignment of under par children to the summer camp, etc.

Results and Conclusions

1. Altogether 460 tests were made, between the ages of one and seven years, in all parts of the community except the rural district, and representative of a variety of economic, social, and racial factors.

2. The female children showed a distinctly higher rate in the 6 or 7 year group than the males, the ratio being 55 per cent. to 38 per cent. for positive reactions. For the entire age group the 500 children in this age group, this number per cent. for males and 35 per cent. for females. For both sexes combined the percentage of positive reactions was 33.

3. The percentage of positive reactions increases consistently with age, ranging from 15 per cent. for 1 to 2 years up to 54 per cent. for 6 to 7 years, both sexes included.

4. Variations in the percentage of positive reactions in different sections of the community seem to fall along racial rather than along economic or sanitary lines. The Coburnville section of the community, inhabited largely by Italians, with hygienic conditions poor and very similar to hygienic conditions in the village of Saxonville, had a percentage of positive reactions of 46, whereas Saxonville, inhabited largely by people of Irish-American, French-Canadian, and Jewish extraction, had a percentage of positive reactions of 23.

5. Classified by races the percentage of positive reactions for Italians was 51, for Americans 18, and for the Irish race stock 30. On the other hand the number of adult cases found thus far is relatively low in the Italian group, and as is well-known, the tuberculosis mortality rates for Italians are in general below average in American communities. This holds true for Framingham.

In contrast, the Irish group in the tuberculin study show a comparatively low percentage of reactions, in spite of the fact that tuberculosis rates in Irish stock generally, in Framingham and elsewhere, are uniformly high.

Does this mean that the tuberculin reaction measures the resistance of the child to infection, in which case, with a greater exposure and a more widespread infection among Irish children, one might expect to find a milder or less frequent von Pirquet reaction than would be the case in a more resistant stock?

6. In the physical examinations of the positive cases no active cases of tuberculosis were discovered, even under five years of age. These children will so far as possible be followed through the period of the Demonstration.

7. Subsequent measures that will be attempted with this group include the clinical follow-up of the positive children, the use of X-ray as an aid in diagnosis, the provision for practical medical and surgical treatment for children found with nose and throat defects, and a careful study of the relation of positive reactions to other factors such as milk supply, housing congestion, exposure to infection, the relation to cases and deaths from tuberculosis in the community, etc.

MEDICAL INTERNE.—SAINT ELIZABETH'S HOSPITAL

March 12, April 9, and May 7, 1919

The United States Civil Service Commission announces open competitive examinations for medical interne, for both men and women, on the dates stated above. A vacancy in Saint Elizabeth's Hospital, Washington, D. C., at \$900 a year, and future vacancies requiring similar qualifications, at this or higher or lower salaries, will be filled from these examinations, unless it is found in the interest of the service to fill any vacancy by reinstatement, transfer, or promotion.

The positions are tenable for one year, and pay \$75 a month and maintenance. During the year, however, a post-graduate course in mental and neurological diagnostic methods is given, an examination is held, and promotions to the next grade, junior assistant physician, are made. Beyond this there is regular advancement for men whose services are satisfactory. Saint Elizabeth's Hospital has over 3,000 patients and about 800 employees to care for. In addition to the general medical practice offered, the scientific opportunities in neurology and psychiatry are unsurpassed.

Competitors will be examined in the following subjects, which will have the relative weights indicated:

<i>Subjects.</i>	<i>Weights.</i>
1. Anatomy and physiology (general questions on anatomy and physiology, and histologic or minute anatomy)	10
2. Chemistry, materia medica, and therapeutics (elementary questions in inorganic and organic chemistry, the physiologic action and therapeutic uses and doses of drugs)	15
3. Surgery and surgical pathology (general surgery, surgical diagnosis, the pathology of surgical diseases)	20
4. General pathology and practice (the symptomatology, etiology, diagnosis, pathology, and treatment of diseases)	25
5. Bacteriology and hygiene (bacteriologic methods, especially those relating to diagnosis; the application of hygienic methods to prophylaxis and treatment)	15
6. Obstetrics and gynecology (the general practice of obstetrics, diseases of women, their pathology, diagnosis, symptoms, and treatment, medical and surgical)	15
Total	100

Applicants must show that they are graduates of a reputable medical college or that they are senior students in such an institution, and expect to graduate within six months from the date of this examination. The names of senior students will not be certified for appointment in the event they attain eligibility in the examination until they have furnished proof of actual graduation.

Applicants must not have graduated previous to the year 1915 unless they have been continuously engaged in hospital, laboratory, or research work along the lines of neurology or psychiatry since graduation, which fact must be specifically shown in the application.

Applicants must be unmarried.

Age, 20 years or over on the date of the examination.

No sample questions of these examinations will be furnished.

Applicants must submit to the examiner on the day of the examination their photographs, taken within two years, securely pasted in the space provided on the admission cards sent them after their applications are filed. Proofs or group photographs will not be accepted.

These examinations are open to all citizens of the United States who meet the requirements.

Applicants should at once apply for Form 1312, stating the title of the examination desired, to the Civil Service Commission, Washington, D. C., or to the Secretary of the United States Civil Service Board. Applications should be properly executed, excluding the medical and county officer's certificates, and filed with the Commission at Washington in time to arrange for the examination at the place selected by the applicant. The exact title of the examination, as given at the head of this announcement, should be stated in the application.

THERAPEUTIC BALANCE

That we be not led astray by the new and apparently brilliant accessions to therapy, it is well that we sometimes look at our compass and get our bearings, lest we become swamped in a sea of uncertainty and lose the good to save the valueless. What with the introduction of serums and vaccines and other novelties strenuously pushed by commercial enthusiasm, besides hundreds of synthetic drugs with novel and unfamiliar names, we are apt to forget or for the time at least ignore our old and well-tried medicines, in the hope of fulfillment of some Utopian therapeutic dream. Better that we do what we know we can do with our old and trustworthy drugs than to record an occasional or brilliant achievement with some new fad, together with so many failures that we become drug pessimists or drug nihilists. We don't want the disrupting methods of Bolshevism in therapy any more than we do in international polity.— *Eclectic Medical Journal*.

HOW THE H. K. MULFORD COMPANY PREPARED TO MEET THE INFLUENZA PANDEMIC OF 1918

Realizing that the epidemic of influenza raging in Europe was likely to invade the United States, the H. K. Mulford Company early prepared to meet the demand for serums and vaccines required for the prevention and treatment of the disease and its complications.

The disease was known to be due to a mixed infection in which the influenza bacillus (Pfeiffer's bacillus), pneumococcus, streptococcus, micrococcus catarrhalis and the staphylococcus were the invading causative microorganisms.

Early in September the facilities of the Glenolden Laboratories were offered to the hospitals of Philadelphia to aid in the investigation of the cause of influenza and particularly the pneumonia complications. Material was sent from the Philadelphia Hospital, U. S. Naval Hospital and other institutions for study. Fifteen strains of the influenza bacillus and virulent strains of streptococcus hemolyticus taken from the material sent in from the hospitals were added to the influenza bacterins to insure their greater specificity.

The pneumonias following the attacks were known to be due to the pneumococcus and streptococcus, consequently antipneumococcic and antistreptococcic serums were prepared in large quantities to meet the requirements.

For several years previous, extensive studies had been made by Dr. A. Parker Hitchens, former Director of the Laboratories, to determine the character of the infections responsible for influenza, acute bronchitis and common colds, which year after year regularly occur in the United States. The microorganisms causing these diseases in former epidemics of influenza are the same as those responsible for the pandemic of influenza occurring in 1889-90, and also the present pandemic.

THE H. K. MULFORD COMPANY are therefore entitled to credit for the research work done in their laboratories, which enabled them to place in the hands of the medical profession a serobacterin and bacterin for the prevention and treatment of the respiratory affections, particularly for preventing influenza and the catarrhal and lobar pneumonia complications.

These bacterins, known respectively as Influenza Serobacterin Mixed and Influenza Bacterin Mixed, have attained high reputation both as prophylactic and therapeutic agents.

When the influenza finally reached this country and with sudden onslaught swept over the Eastern section of the United States, these reliable and effective prophylactic and therapeutic agents were supplied in enormous quantities and were largely responsible for controlling the disease and in reducing mortality.

Reports from physicians in charge of medical work connected with industrial institutions, boards of health and from general practitioners abundantly justify the prophylactic use of Influenza Serobacterin containing the organisms isolated from the present epidemic in preventing influenza and pneumonia.

It is too early to supply exhaustive statistics, but enough evidence has been accumulated fully to justify the employment of Influenza Serobacterin or Influenza Bacterin Mixed, for the prevention and treatment of influenza. It has been amply demonstrated that patients immunized by the bacterins rarely acquire influenza and those who take the disease are practically insured against complication by the pneumonias which have proved so fatal during the recent epidemic.

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